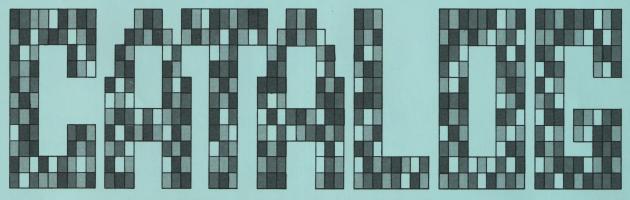
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SPRING 1982

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Magazines

Creative Computing, Microsystems, Small Business Computers, Sync

Software Peripherals Books





David Ahl, Founder and Publisher of Creative Computing

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"The beat covered by Creative Computing is one of the most important, explosive and fast-changing."—Alvin Toffler

You might think the term "creative computing" is a contradiction. How can something as precise and logical as electronic computing possibly be creative? We think it can be. Consider the way computers are being used to create special effects in movies—image generation, coloring and computer-driven cameras and props. Or an electronic "sketchpad" for your home computer that adds animation, coloring and shading at your direction. How about a computer simulation of an invasion of killer bees with you trying to find a way of keeping them under control?

Beyond Our Dreams

Computers are not creative per se. But the way in which they are used can be highly creative and imaginative. Five years ago when *Creative Computing* magazine first billed itself as "The number 1 magazine of computer applications and software," we had no idea how far that idea would take us. Today, these applications are becoming so broad, so allencompassing that the computer field will soon include virtually everything!

In light of this generality, we take "application" to mean whatever can be done with computers, ought to be done with computers or might be done with computers. That is the meat of Creative Computing.

Alvin Toffler, author of Future Shock and The Third Wave says, "I read Creative Computing not only for information about how to make the most of my own equipment but to keep an eye on how the whole field is emerging."

Creative Computing, the company as well as the magazine, is uniquely light-hearted but also seriously interested in all aspects of computing. Ours is the magazine of software, graphics, games and simulations for beginners and relaxing professionals. We try to present the new and important ideas of the field in a way that a 14-year old or a Cobol programmer can under-

stand them. Things like text editing, social simulations, control of household devices, animation and graphics, and communications networks.

Understandable Yet Challenging

As the premier magazine for beginners, it is our solemn responsibility to make what we publish comprehensible to the newcomer. That does not mean easy; our readers like to be challenged. It means providing the reader who has no preparation with every possible means to seize the subject matter and make it his own.

However, we don't want the experts in our audience to be bored. So we try to publish articles of interest to beginners and experts at the same time. Ideally, we would like every piece to have instructional or informative content—and some depth—even when communicated humorously or playfully. Thus, our favorite kind of piece is acessible to the beginner, theoretically non-trivial, interesting on more than one level, and perhaps even humorous.

David Gerrold of Star Trek fame says, "Creative Computing with its unpretentious, down-to-earth lucidity encourages the computer user to have fun. Creative Computing makes it possible for me to learn basic programming skills and use the computer better than any other source.

Hard-hitting Evaluations

At Creative Computing we obtain new computer systems, peripherals, and software as soon as they are announced. We put them through their paces in our Software Development Center and also in the environment for which they are intended—home, business, laboratory, or school.

Our evaluations are unbiased and accurate. We compared word processing printers and found two losers among highly promoted makes. Conversely, we found one computer had far more than its advertised capability. Of 16 educational packages.

only seven offered solid learning value.

When we say unbiased reviews we mean it. More than once, our honesty has cost us an advertiser—temporarily. But we feel that our first obligation is to our readers and that editorial excellence and integrity are our highest goals.

Karl Zinn at the University of Michigan feels we are meeting these goals when he writes. "Creative Computing consistently provides value in articles, product reviews and systems comparisons . . . in a magazine that is fun to read."

Order Today

When you order an introductory subscription to *Creative Computing*, you'll save as much as 33%. One year (12 issues) costs \$19.97—20% off. Two years go for \$36.97, or 26% off. And three years cost \$49.97—a 33% saving. All savings are based on the full one-year subscription price of \$24.97.

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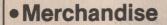
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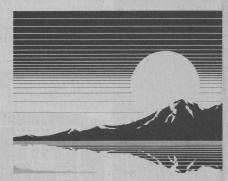
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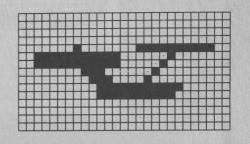
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THE creative computing software ARCADE

TRS-80





Audio visual licensed from Atari, Inc. 32K TRS-80 Model I Diskette CS-3521 \$19.95 16K TRS-80 Cassette CS-3021 \$19.95

TRS-80 version of the popular arcade game where you must destroy incoming missiles with your own anti-ballistic missiles before they destroy your cities with nuclear warheads.

Action and Bumping Games CS-4516 \$19.95 32K DOS 3.3 Requires Applesoft in ROM or Apple II Plus and game paddles



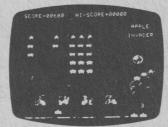
Six games for action fans. Cross a deadly field in Mine Rover. Hit the ramps and try to make it over the trucks in Moto Jump. Race against the clock with the Road Machine. Get in shape with Obstacle Course. Test your reflexes at Bumper Blocks and Hustle Junior

1/1/2/2/2/1-1/2/

Super Invasion

Apple II (requires paddles) licensed from Astar International 48K Diskette DOS 3.3 CS-4505

16K Cassette CS-4006 \$19.95 Sorcerer 16K Cassette CS-5011 \$19.95 by Matt Hickey



This is the original arcade game, with superb high resolution graphics, high speed action, nail biting tension, and hilarious antics by the moon creatures. Fifty five aliens whiz across the screen, quickening their descent, challenging you to come out from behind your blockade and pick them off with your lasers before they bomb you, destroy your shields, or drop down right on top of

Super Invasion

by John Varela

32K TRS-80 Model I Diskette CS-3520

16K TRS-80 Cassette CS-3020 \$19.95 A low resolution, high speed arcade

game similar to our Apple and Sorcerer versions. The aliens move back and forth across the screen, dropping ever lower to attack you as you attempt to destroy them with your lasers.

Star Clones

by Matt Clark and Doug Green CS-4527 \$29.95 48K Requires Apple II or Apple II Plus, DOS 3.3 and game padles



There is unrest in the galaxy. The evil master clone has disrupted life for all, save the members of the Clone Conspiracy and their evil clone agents. But, there is still hope. By mastering the four simulations on this disk you can save the galaxy from certain doom. Three skill levels allow you challenging practice for your confrontation with the dreaded clones. After preparing yourself with the simulations, you are ready to do battle. There are ten missions that must be accomplished in order to defeat the Master Clone

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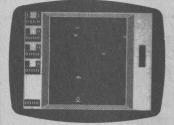
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THE creative computing software **ARCADE**



by Rodney McCauley
Apple II 48K Diskette DOS 3.3 (requires paddles) CS-4526 \$29.95

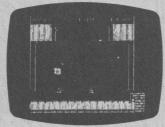


Wave after wave of alien attackers attempt to overwhelm your defenses. Each wave comes in a different formation and uses different attack and defense strategies. You get dozens of superior arcade games combined into one program. If you ever master the first set of games on the diskette, where the attackers are without shields, then you are ready for the second set. This time the attackers are sheltered by shields. They can drop bombs right through the shields, but you cannot shoot through them. Successive waves use different strategies. Some move from shield to shield, allowing you to shoot while they are in between. Others just come out brie:ly to attack, and you must have fast reflexes to get them. Bonus points are awarded for beating the clock, with a countdown timer displayed on screen. This may be our finest arcade uame ever!

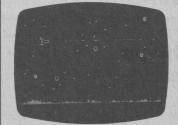
Blisterball and Mad Bomber

By Rodney McCauley Apple II 48K Diskette DOS 3.3 (requires paddles) CS-4511 \$24.95

A frantic, fast paced romp that can be played for hours, Blisterball is the first truly original arcade-type game for a home computer. As the bouncing balls drop from above, the player moves his laser base and tries to shoot them. It's easy at first-with just one ball. Then come two, then three. It's getting harder. Four balls come, and finally five. Surviving them, the player gets to shoot at inelastic bonus



balls. If he makes it this far, the second round starts. The balls bounce lower, the walls close in. Shades of Poe and Newton! Making Superb use of Apple graphics and sound, Blisterball can be played by one or two people. Mad Bomber, included on the same disk, is another fast paced arcade game. Racks of bombs fill up above you. Whenever four bombs are in any rack, they start to fall. You can shoot them either in the rack or while they are falling, but since there are racks all across the top of the screen, you need to stay ahead of them by Erol Pekoz Apple II 48K Diskette DOS 3.3 (requires paddles) CS-4520 \$24.95



Defend your home planet against the invading Torids! Try to protect your nuclear fuel tanks, which the aliens are intent on stealing. The Torids drop down, steal a fuel tank and rise up to escape. They are also armed, and will not hesitate to shoot at you. While you whiz by the surface of your planet at incredible speed, you must avoid enemy fire, maneuver your ship, and try to shoot down the Torids without hitting the fuel tanks!

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TRS-80

Adventureland, Pirate Adventure and Mission Impossible

Adventures 1 2 & 3

Disk CS-4513 \$29.95 Requires 48K Applesoft or Apple II Plus



- 1. Adventureland (by Scott Adams). You wander through an enchanted world trying to recover the 13 lost treasures. You'll encounter wild animals, magical beings, and other perils and puzzles. Can you recover the Blue Ox from the quicksand? Or find your way out of the Maze of Pits? Happy Adventuring....
- 2. Pirate Adventure (by Scott Adams). "Yo ho ho and a bottle of rum..." You'll meet up with the pirate and his daffy bird along with many other strange sights as you attempt to go from your London flat to Treasure Island. Can you recover Long John Silver's lost treasure? Happy sailing, matey....
- 3. Mission Impossible (by Scott Adams). Good Morning, your mission is to... and so it begins. Will you be able to complete your mission on time? Or is the world's first nuclear reactor doomed? This one's well named. It's hard, there's no magic, but plenty of suspense. Good Luck....

Voodoo Castle, The Count and Strange Odyssey

Adventures 4, 5, & 6

Disk CS-4522 \$29.95 Requires 48K Applesoft or Apple II Plus

Disk CS-3517 \$39.95 Requires 32K TRS-80 Model I

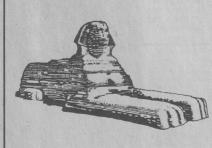


Mystery Fun House, Pyramid of Doom and Ghost Town

Adventures 7, 8, & 9

Disk CS-4523 \$29.95 Requires 48K Applesoft or Apple II Plus

Disk CS-3514 \$39.95 Requires 32K TRS-80 Model I



- 7. Mystery Fun House (by Scott Adams). Can you find your way completely through the strangest Fun House in existence, or will you always be kicked out when the park closes?....
- 8. Pyramid of Doom (by Scott Adams). An Egyptian Treasure Hunt leads you into the dark recesses of a recently uncovered Pyramid. Will you recover all the treasures or more likely will you join its denizens for that long eternal sleep?....
- 9. Ghost Town (by Scott Adams). Explore a deserted mining town in search of 13 treasures. From rattlesnakes to runaway horses, this ADVENTURE's got them all! Just remember, Pardner, they don't call them Ghost Townsfor nothin'. (also includes new bonus scoring systems.)

Savage Island Parts 1 & 2 and Golden Voyage

Disk CS-4524 \$29.9 Requires 48K Apple

10. Savage Island Part 1 (by Scott Adams). A small island in a remote ocean holds an awesome secret. Will you be the first to uncover it?....

4. Voodoo Castle (by Scott Adams).

Count Cristo has had a fiendish

curse put on him by his enemies

There he lies, with you his only

hope. Will you be able to rescue him or is he forever doomed? Beware the Voodoo Man....

5. The Count (by Scott Adams). You wake up in a large brass bed

in a castle somewhere in Transylvania. Who are you, what are you doing here, and WHY did the postman deliver a bottle of blood?

You'll love this ADVENTURE, in fact, you might say it's Love at

6. Strange Odyssey (by Scott Adams). Marooned at the edge of

the galaxy, you've stumbled on the ruins of and ancient alien

civilization complete with fabulous

treasures and unearthly technol-

ogies. Can you collect the treasures and return or will you end up

marooned forever?.

- 11. Savage Island Part 2 (by Scott Adams). After struggling through Part 1, you have the consolation of knowing it's half over. This concludes this two part ADVENTURE. It requies that you finish Part 1 and receive the password.
- 12. Golden Voyage (by Scott Adams). The king lies near death in the royal palace you have only three days to bring back the elixir needed to rejuvenate him. Journey through the lands of magical fountains, sacred temples, stormy seas, and gold, gold, GOLD! Can you find the elixir in time?....

Adventures 10, 11, & 12

Disk CS-4524 \$29.95 Requires 48K Applesoft or Apple II Plus

Disk CS-3515 \$39.95 Requires 32K TRS-80 Model I



Scott Adams' Adventures

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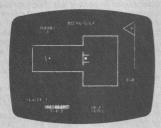
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software

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Micro Golf



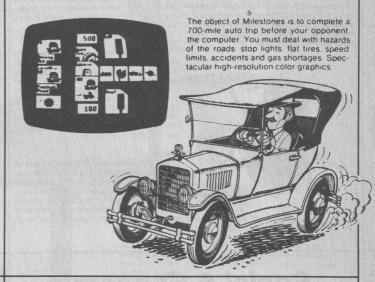


The whole family will enjoy playing our miniature golf simulation. The game includes high resolution graphics and uses a machine language subroutine to move the ball in a realistic manner. Three different courses are provided, as well as a course editor that allows you to create your own miniature golf courses. One to four players can play, using either the Apple II keyboard or optional game paddles. Requires 48K Apple II with one disk drive, DOS 3.3, and Applesoft in ROM

Milestones

CS-4515 Disk Requires 48K

Applesoft or Apple II Plus



Picture Puzzles



CS-4525 Disk (48K) \$19.95

Endless variety for the puzzle fancier! Use one of the eight outstanding high resolution pictures provided, or any of your own hi-res pictures. Choose interlocking pieces, or accept the challenge of identical squares. Brave souls can do it the hard way, beginners can peek at the finished picture. Requires one disk drive, game paddles, DOS 3.3, and Applesoft in ROM.

Advanced Air Traffic Controller

Advanced Air Traffic Controller Diskette CS-4517 (32K) \$19.95 **Original Air Traffic Controller** Cassette CS-4008 (16K) \$14.95



These fast-moving, real-time games place you in the role of an air traffic controller. You control 26 prop planes and jets as they land, take off, and fly over your air space. Advanced Air Traffic Controller offers five different radar maps, each with its own challenges and strategies, as well as added requirements such as watching the fuel supply of the planes. In both versions you give orders to change altitude, turn, maintain a holding pattern, approach, and land at one of two airports.

Written by an air traffic controller, this is a realistic machine language simulation. There are 84 different skill levels, so you won't easily tire of this absorbing simulation.

Outdoor Games & Haunted House

CS-4504 Disk (32K) \$24.95

Find your way out of a haunted house in six hours, battle a raging forest fire using chemical retardants, go on a fishing trip, and discover treasure in this package of five games. Apple II or Apple II Plus

Story Time & Don't Fall

Create delightful stories presented with sound and colorful low-res graphics. Over 100,000 variations are possible by answering questions and using your imagination.

Several new features make this variation of hangman better than ever. You can choose words from nine catagories. Every wrong answer brings you one step closer to falling in the water. Round two permits the computer to try and guess your word. Three skill

CS-4702 Disk (16K) \$24.95 DOS 3.3 CS-4207 Cassette (16K) \$11.95 Cassette does not include Don't Fall



software

Requires 48K Applesoft in ROM

Ecology Simulations - I

Disk CS-4706 \$24.95

Requires 48K Applesoft in ROM or Apple II Plus

STERL allows you to investigate the effectiveness of two different methods of pest control—the use of pesticides and the release of sterile males into a screw-worm fly population. The concept of a more environmentally sound approach versus traditional chemical methods is introduced. In addition, STERL demonstrates the effectiveness of an integrated approach over either alternative by itself



The POP series of models examines three different methods of population projection, including exponential, S-shaped or logistical. and logistical with low density effects. At the same time the programs introduce the concept of successive refinement of a model since each POP model adds more details than the previous one

TAG simulates the tagging and recovery method that is used by scientists to estimate animal populations. You attempt to estimate the bass population in a warm-water, bass bluegill farm pond. Tagged fish are released in the pond and samples are recovered at timed intervals. By presenting a detailed simulation of real sampling by "tagging and recovery," TAG helps you to understand this process.

BUFFALO simulates the yearly cycle of buffalo population growth and decline, and allows you to investigate the effects of different herd management policies. Simulations such as BUFFALO allow you to explore "what if" questions and experiment with approaches that might be disatrous in

Ecology Simulations - II

Disk CS-4707 48K \$24.95

POLLUTE focuses on one part of the water pollution problem; the accumulation of certain waste materials in waterways and their effect on dissolved oxygen levels in the water You can use the computer to investigate the effects of different variables such as the body of water, temperature, and the rate of dumping waste material. Various types of primary and secondary waste treatment as well as the impact of scientific and economic decisions can be examined



In RATS, you play the role of a Health Department official devising an effective, pratical plan to control rats. The plan may combine the use of sanitation and slow kill and quick kill poisons to eliminate a rat population. It is also possible to change the initial population size, growth rate, and whether the simulation will take place in an apartment building or an entire city.

or Apple II Plus

With MALARIA, you are a Health Official trying to control a malaria epidemic while taking into account financial considerations in setting up a program. The budgeted use of field hospitals, drugs for the ill, three types of pesticides, and preventative medication, must be properly combined for an effective control program.

DIET is designed to explore the effect of four basic substances, protein, lipids, calories and carbohydrates, on your diet. You enter a list of the types and amounts of food eaten in a typical day, as well as your age, weight, sex, health and a physical activity factor. DIET is particularly valuable in indicating how a diet can be changed to raise or lower body weights and provide proper nutrition.

Social & Economic **Simulations**

This program, based on the limits to growth study of the Club of Rome, is a world model with on five major variables: population, pollution, food supply, industrial output, and resource usage. These are all linked by the birth rate, death rate, pollution generation rate, resource usage rate, industrial growth rate, and food production rate. Varying these can result in extraordinary insights into the possible future of the world.

Market

In this program, two people compete with each other in the bicycle manufacturing business. Each has to deal with the production, the advertising, and the pricing of their products, and try to make more money than his opponent.

Uspop
This program allows the user to study
This program allows the User to study many aspects of the United States' demography (population change). This means that the user can investigate the effect of many social changes on population.

Requires 48K Applesoft In ROM or Apple II Plus

Diskette CS-4708 (48K) \$24.95



Trucker This program simulates coast-to-coast trips by an independent trucker hauling various cargos. The user may haul oranges, freight or U.S. mail. All have different risks and rewards. Maximum profit comes from prudent risk-taking.

BUS O

GO. TELSA

Disk CS-4710 48K \$24.95

If all goes well, you can obey the speed limits, stop for eight hours of sleep each night and still meet the schedule. Bad weather, road construction or flat tires may put you behind schedule. You may try to increase your profit by skimping on sleep, driving fast or carrying an overweight load.

Other factors are choice of routes, truck payments, fuel, food, tolls and fines. The simulation is engrossing and informative

Trucker and Streets of the City

Streets of the City

This simulation is modeled on Grand Rapids, Michigan, a metropolitan area with a population of 550,000. The budgeting, cost and work standard bases are derived from actual experiences of the city over the past five years. The objective of the simulation is to complete a ten-year plan of street and transit improvements while retaining the support of a majority of the City Commission.

During your tenure, you must construct streets and Interstate highways, repair existing streets, and improve traffic safety. For the Transit Authority you have to upgrade and replace a delapidated bus fleet, increase ridership, reduce maintenance downtime and improve on-shedule perfor-

Other factors to be considered are operating tax levies, construction bonding and labor negotiations. The simulation provides a substantial challenge and it is both educational and entertaining

Apple Games Pac

Dodgem is one of nine games in the Apple Games Pac, a collection of strategy and action games. Other games on the disk include Nuclear Reaction (a challenging high-tech version of Roman checkers), Brickout (knock down a wall-four skill levels) Blockade (two players each build a trail of walls), Torpedo Alley (destroy enemy ships with torpedoes from your submarine), StarCS-4507 Disk (48K) \$19.95 DOS 3.3

Wars (zap the TIE fighters-a joystick helps!), Rocket Pilot (land in rough terrain), Saucer Invasion (your SAM missiles against the devious saucers) and Genius (a fast-paced, timed trivia quiz)

Requires 32K Apple, disk, DOS 3.3 and paddles and/or joystick. Disk CS-4507,

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Software for Elementary Schools



All MECC software is on disk and requires 48K Applesoft in ROM and Dos 3.3. All except MECC 720 and MECC 724 are copy protected. Damaged copy protected disks will be replaced with the return of the original and a \$5 handling charge.

MECC-701 Apple Demonstration Diskette

This is a sample of the applications available on the MECC diskettes. It includes demonstrations in drill and practice, tutorial, simulation, problem solving and worksheet generation. Samples from music, science, social studies, industrial arts, reading, and mathematics are provided \$19.95

MECC-702 Elementary, Volume 1 Mathematics

These are programs for the elementary mathematics classroom. Included are games of logic such as "Bagels", "Taxman" and "Number"; drill and practice programs such as "Speed Drill", "Round" and "Change"; and programs about the metric system such as "Metric Estimate", "Metric Length" and "Metric 21". \$24.95

MECC-703 Elementary, Volume 2 Language Arts

In this package are the programs "Spell", which drills students in spelling; "Mixup", which presents words in mixed up order, and "Word Find", which creates a word find puzzle for the teacher to duplicate. If words and definitions are entered, a "Cross Word" puzzle can be generated or a "Word Game" can be played. "Talk" is a program designed to introduce students to the computer and "Amazing" prints out worksheet mazes. \$24.95



MECC-704

MECC-704 Elementary, Volume 3 Social Studies
The programs "Sell Apples", "Sell Plants", "Sell
Lemonade", and "Sell Bicycles" can be used to teach elementary economics to students in grades 3 and up. "Civil" will reinact battles of the Civil War, while "States" and "States" provide drill and practice on the location of states in the U.S. and their capitals. \$24.95.



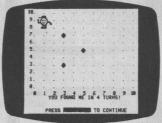
MECC-705

MECC-705 Elementary, Volume 4 Mathematics and

Two mathematics programs, "Estimate" and "Mathgame" provide reinforcement on estimating and basic facts. Food chains in fish and animals can be studied through "Odell Lake" and "Odell Woods". "Solar Distance" teaches the concepts of distances in space and "Ursa" is a tutorial on constellations, \$24.95



MECC-702



MECC-701

CAI Programs Volume I

U.S. Map helps students learn the names of the fifty states by providing a map of the United States to fill in the correct name. The student can take a "Spelling Test". This program keeps track of the words missed and gives a score. "Math Drill" tests skills in addition, subtraction, multiplication, and division. "Add-with-Carry" is a tool for teaching addition of two and three placed numbers. This program has adjustable levels. Cassette CS-4201 requires 16K Apple II. \$11.95 (Disk CS-4701 with Vol. II \$24.95 requires 48K Apple II or Apple II Plus.)



CS-4201, 4701

MECC-719 Elementary Volume 5, Language Arts
This package deals with the reading concept of prefixes. The diskette contains five lessons which drill the students in the prefixes "un", "re", "dis", "pre", and "in". "Dragon Fire" and "Pre-App II" are highly motivating review exercises. \$24.95



MFCC-719

MECC-725 Elementary Volume 6, Social Studies

Historical simulations, "Oregon Trail", "Voyageur", and "Fur Trader" are included on this diskette. "Nomad" teaches students map reading, and "Sumer" is a simulation in which students govern a kingdom and decide how much food and land to give to the people without starving any of them \$24.95

CAI Programs Volume II

"Europe Map" tests student's knowledge of Europe's countries and capital cities. "Meteor Math" provides a fun way to practice addition skills. After successfully solving math problems presented on the screen, the student is allowed to use the laser to destroy oncoming meteors and save the Earth.
"Music Composing Aid" is a tool to create music by
using an Apple. The speaker enables the student to
create, save, recall, and edit musical creations.
Cassette CS-4202 requires 16K Apple II \$11.95. (Disk CS-4701 with Vol. I \$24.95, requires 48K Apple II or Apple II Plus.)

The Music Composing Aid is not available on disk.



CS-4202, 4701

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Secondary **Educational** Software

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Disk MECC-706 Mathematics, Volume 1 Senior High

Bagels', "Snark", "ICBM", and "Radar" will teach students logic while reinforcing the concepts of plotting points or angle measurements. "Algebra" provides drill and practice in solving equations. "Slope", "Polygraph", and "Polar" can all be used in plotting equations on a grid. \$24.95.

Disk MECC-709 Science, Volume 2 Senior High

"Pest" deals with the use of pesticides, and "Cell Membrane", in which the user takes the part of a cell membrane, can be used in biology classes. "Snell" plots light refraction demonstrating Snell's law, while "Collide" simulates the collision between two bodies. "Diffusion" deals with the diffusion rates of various gasses, "Nuclear Simulation" shows radioactive decay of nine different radioisotopes, "ICBM" and "Radar" teach angles and projections on a coordinate system. \$24.95

Disk MECC-707 Science, Volume 3 Senior High

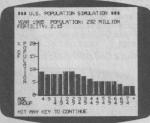
The "Fish" program uses graphics to show the circulatory system of a fish. "Odell Lake" is used to explore food chains, "Ursa" teaches about constellations, and "Quakes simulates earthquakes. "Minerals" can be used in the area of earth science to identify 29 minerals by having students perform simple tests. \$24.95



MECC-716

Disk MECC-716 Aestheometry, Volume 1

Aestheometry deals with the topic of curve sketching by introducing and demonstrating the "space concepts" of elliptical, parabolic, and hyberbolic curves. Curve sketching designs are developed to provide an aesthetic view of geometric shapes. \$24.95



CS-4708

Disk CS-4708 Social and Economic Simulations

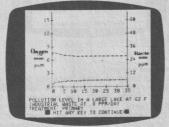
Limits" is a microcomputer version of the well known "Limits to Growth" project done by the Club of Rome. It contains a model of a world that is built of five subsystems (population, pollution, food supply, industrial output, and resource usage) linked together by six variables: birth rate, death rate, pollution generation, resource usage rate, industrial output growth rate, and food production "Market" allows two or more people to play the roles of companies who are competing for the market for a particular product. Each player makes marketing decisions quarterly including the production level, the advertising budget, and the unit price of the product for his company. "USPOP" allows the user to study many aspects of the United States' human demography (population change) including population growth, age and sex distribution "USPOP" makes population projections and investigates the consequences of many different demographic changes. Requires 48K. Applesoft or Apple II Plus. \$24.95. (Also available for PET/CBM and TRS-80.)

SNELL'S LAW

MECC-709



MECC-707



CS-4707



CS-4704

Disk CS-4706 Ecology Simulations I

"POP" demonstrates the strengths and the weaknesses of population projection by showing how three simple. population-growth models give vastly different projections for a sample population's growth. At the same time students are introduced to the concept of successive refinement of a model, since each successive POP model adds details or a model, since each successive POP model adds details that the previous model lacked. Effectiveness of two different methods of pest control can be explored in "STERL". These are: 1. the use of pesticides, and 2.the release of sterile males. "TAG" simulates one technique ("tagging and recovery") that is used by scientists to restimate the animal population in a designated area. "BUFFALO" allows the exploration of "what if" questions and experimentation with ecological policies that might prove disastrous in real life, as students formulate harvest policies. Requires 48K Applesoft or Apple II Plus. \$24.95 (Also available for PET/CBM and TRS-80.)

Disk CS-4707 Ecology Simulations II

"Pollute" demonstrates the basic scientific and economic factors involved in the water pollution problem. The student uses the computer to investigate the effects of different variables such as water temperature and rate of dumping waste material. In "Rats" the student is a health department official devising a plan to control rats in a given area. The plan can be varied to determine the most effective strategy for controlling the rat population. With "Malaria", the student plays the role of a health official trying to control a malaria epidemic while simultaneously taking into account financial considerations. "Diet" is a computer program designed to let the student explore the quality of a diet of four basic substances: calories, protein, lipids, and carbohydrates. Requires 48K Applesoft in ROM or Apple II Plus. \$24.95. (Also available for PET/CBM and TRS-

Disk CS-4710 Trucker and Streets of the City

Streets of the City" is a simulation modeled on Grand Rapids, Michigan, a metropolitan area with a population of 550,000. The budgeting, cost and work standard bases are derived from actual experiences of the city over the past five years. The objective of the simulation is to complete a ten-year plan of street and transit improvements while retaining the support of a majority of the City Commission. "Trucker" simulates coast-to-coast trips by an independent trucker hauling various cargos. The goal of the game is to keep on schedule while avoiding bad weather, road construction, speeding tickets, and flat tires. 48K Applesoft or Apple II Plus. \$24.95 (also available for TRS-80, Atari, and PET).

Disk CS-4704 Hail to the Chief
The object in this simulation is to be elected president. In the campaign the player sets his strategy and carries it out week by week. He may run TV or magazine ads, travel to different states, hold news conferences and participate in a debate. The package includes four models of varying complexity; each can be used at ten levels of difficulty. The more complex models introduce the influences of incumbancy, campaign finance, and spending limits. "Hail to the Chief" has been used as a teaching aid in Political Science, Voting Behavior, and Computer Science at the University level since 1976. It is a well proven package which includes a comprehensive manual. Requires 48K Apple II Plus or Applesoft. \$24.95

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Educator's Utilities and Miscellany

Disk MECC-715 Teacher's Utilities Volume 1

"Review" allows the teacher to set up a list of questions which can be used either by the "Review" program or the "Test Generator" program. The teacher can also make "Cross Word" puzzles, "Word Find" puzzles, "Block Letter" banners and "Posters" using this program. "Frequency" and "Percent" can be used to calculate grades and to do statistical analysis. \$24.95

Disk MECC-720 Programmer's Aid Volume 1

The "Programmer's Aid" diskette provides help for the programmer. There are programs that allow the programmer to be able to "Upload" and "Download" to the MECC system; programs that work with text files including "FP to text", "Random Editor", "Sequential Editor", and "Text List"; along with binary files, "Binary File Info", "Binary File to FP". Two programs, "Tables" and "Merge" allow the user to create, change and merge graphic shapes for use in a program. "Free Space" will tell the amount of space on the diskette while "Hidden Characters" will locate control characters. "Starter" will put standard routines such as space bar, music, graphic characters or input into a user's program which is just being created or already created. \$32.95.

Disk MECC-724 Shape Tables Volume 1

The "Shape Tables" diskette includes 12 files of 187 shapes that can be incorporated in a user's program. Also included are aids needed to work with shape tables. \$24.95.



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CS-4709

MECC-724

Disk CS-4709 Apple Gradebook

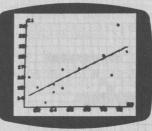
"Classfile Initiation" allows the set-up of a class file system. "Score Entry" uses the roster set up in "Classfile Initiation" to enter a class set of scores on one or more assignments. "Single Student Editor" allows the correction of mistakes. "Record Check" first summarizes the state of the class as a whole, and then examines the individuals. "Statistical Summary" can be run at any time that a detailed summary of a student's performance for an entire class is wanted. "Disk Contents" is useful to check which class files are on the diskette. Requires 32K Applesoft or Apple II Plus, \$24.95.

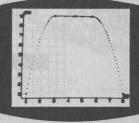
Disk MECC-727 Special Needs Volume 1, Spelling

This diskette is designed to drill handicapped students on frequently misspelled primary and intermediate words. Students answer problems by either using the game buttons, the game paddles or any key on the keyboard. \$24.95.

Disk CS-4803 Scientific Plotter

Scientific Plotter transforms an Apple into a valuable and versatile laboratory tool. "Scientific Plotter" produces high-resolution graphs with ease and elegance. Data can be entered through the keyboard, from disk files, or directly from Basic subroutines. The scale and endpoints of the graph are under the student's control. Numeric labels are automatically added to the axes. Text labels can be placed anywhere on the screen, with horizontal or vertical orientation. The program can scale logarithmically, scale each axis independently, plot selectively in quadrants of the screen, plot with any of the twenty symbols in four different sizes, and much more. Anyone who needs to convert data into meaningful graphs will find that "Scientific Plotter" is an invaluable aid. Requires 48K Applesoft or Apple II Plus, \$24.95.





CS-4803

CS-4804

Disk CS-4804 Curve Fitter

Curve Fitter gives visual meaning to data. Information can be entered through the keyboard or from a disk. "Curve Fitter" can also accept information from analog instruments such as spectrophotometers or pH meters. Data can be scaled, converted to log form, or offset by a constant. Smoothing and averaging features are included in the program. With many user-orientated features, such as numbered axes, four selectable plotting symbols, and the ability to save all data on disk, "Curve Fitter" will prove invaluable to anyone working with data. Requires 48K Applesoft or Apple II Plus, \$34.95.

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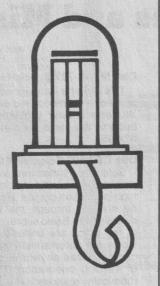
software

creative computing software

Stock & Options Analysis

Disk CS-4801 48K \$99.95

Should you hedge, buy, or sell out? Stock and Options Analysis puts a securities advisor in your computer, providing you with four powerful investment tools. Option gives important indices for opening and closing call option transactions. Opgraph presents a graph or table of profit for any combination of long or short calls, puts, and stocks. This allows the detailed evaluation of three types of hedges. **Newprem** helps predict the future premiums of an option at any desired time and future stock price. Portval lets the computer do the paper work, providing full portfolio services, including value per share, current value, and capital gain. The program includes the effects of commissions, margin interest and dividends. Beyond helping to organize and evaluate your present portfolio, Stock and Options Analysis is an excellent aid for planning and testing future strategies. The comprehensive 24-page manual with this package not only shows how the programs work, but is also a primer on the strategy of hedging listed options against common stocks. This strategy has been repeatedly shown to actually be more conservative and more consistently profitable than straight buying and selling of stocks.



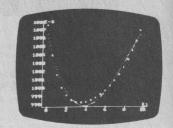
Scientific Plotter and Curve Fitter

Scientific Plotter

Disk CS-4803, \$24.95 Requires 48K Apple II Plus

Turn your Apple into a valuable and versatile laboratory tool. Scientific Plotter produces high-resolution graphs with ease and elegance. Data can be entered through the keyboard, from disk files, or directly from Basic subroutines. The scale and endpoints of the graph are under your control. Numeric labels are automatically added to the axes. Text labels can be placed anywhere on the screen, with horizontal or vertical orientation.

This brief description barely begins to cover the full range of this versatile graphic aid. The program can scale logarithmically, scale each axis independently, plot selectively in quadrants of the screen, plot with any of twenty symbols in four different sizes, and much more. Anyone who needs to convert data into meaningful graphs will find that Scientific Plotter is an invaluable aid.



Curve Fitter

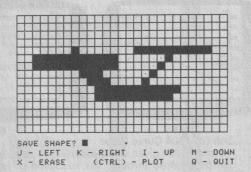
Disk CS-4804, \$34.95 Requires 48K Apple II Plus

Curve Fitter gives visual meaning to your data. Information can be entered through the keyboard or from disk. Curve Fitter can also accept information from analog instruments such as spectrophotometers or pH meters. Data can be scaled, converted to log form, or offset by a constant. Smoothing and averaging features are included in the program.

With a choice of three methods of Interpolation and three methods of least squares fitting, Curve Fitter can provide the best high resolution curve for any meaningful data. Once the curve has been produced, unknowns can be entered and an interpolated value will be returned.

With many user-oriented features, such as numbered axes, four selectable plotting symbols, and the ability to save all data on disk, **Curve Fitter** will prove invaluable to anyone working with data.

Shape Master



CS-4805 Disk (48K) \$24.95 DOS 3.3

This powerful utility allows you to rapidly create, combine, display, edit, save, and print out high resolution shapes for use in your Apple programs. Two separate, convenient entry methods on five user-selected grid sizes ranging from 13 by 23 to 39 by 69 allow for easy definition of many different shapes. A built in character set in three different sizes makes it easy to mix text and graphics in your displays. The "smart" printout routines allow you to make a hard copy of your shapes, even with a non-graphics

printer. A reverse command allows a quick mirror image of any one of your shapes. The edit commands allow you to edit shapes and shape tables, thus you can create, load, merge and delete individual shapes from your shape table. The illustrated, comprehensive manual includes tips on using shapes in your programs. Four games and two graphics demos are included on the diskette to illustrate what you can do with this program. This package was reviewed in *Creative Computing*, June 1981, page 44.

Disk Doctor



CS-4806 Disk (32K) \$19.95 DOS 3.2

Read and modify Apple diskettes with this easy-to-use diskette track-and-sector editor, whether they were created by DOS 3.2, DOS 3.3, the Pascal system or Apple CP/M. Simple editing commands allow you to display any sector and freely edit it on screen, entering changes either as hex or character data. Special commands allow you to print a hard copy of the sector in either 40- or 80-column format.

Disk Doctor will also test your diskettes, verifying every sector, whether vacant or filled with data. You can also format and verify a disk in one operation.

This powerful tool should be in your library.

This powerful tool should be in your library. Whether you need to verify the reliability of your diskettes, patch DOS, edit a data file in place, or repair a damaged sector, you can't afford to be without Disk Doctor.

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ttware

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Sensational Simulations Pop.

Cassette CS-1201 8K \$11.95

In this game, you teach the computer how to identify various animals by asking questions about them.

Fur Trader

It is 1779. You are to lead a fur trading expedition from Ontario through the wilderness to one of several forts to sell furs. To get the best prices, you will brave the Iroquois Indians and the Lachine Rapids.

Hammurabi

This game lets you become the ruler of ancient Sumeria for a while. You have to feed your people and protect them. If the country's resources are not well managed, you may be impeached-or worsell

Stock Market

Can you battle the other brokers and make a fortune? It is not difficult to lose your shirt, so make the most of your \$10,000



Can you guess a word from the computer's extensive vocabulary given a few meager hints? Match your wits against the computer and guess the word as quickly as you can.

Study Made Easy

Cassette CS-1202 8K \$11.95

Using a very simple system, you can create study drill tapes on any subject with great ease. The topics can range from alchemy to zippers. When you have decided on the series of questions, the computer saves them on tape so that they can be rerun as a test.

When a test is run, the computer guides the student carefully, repeating questions if they were answered incorrectly, and helping when the pupil gets stuck.

The program is highly interactive and comes with a sample drill on the cassette.

Ecology Simulations, 1 Cassette CS-1205 16K \$24.95

STERL allows you to investigate the effectiveness of two different methods of pest control-the use of pesticides and the release of sterile males into a screwworm fly population. The concept of a more environmentally sound approach versus traditional chemical methods is introduced. In addition, STERL demonstrates the effectiveness of an integrated approach over either alternative by

The POP series of models examines three different methods of population projection, including exponential, Sshaped or logistical, and logistical with low density effects. At the same time the programs introduce the concept of successive refinement of a model, since each POP model adds more details than the previous one

TAG simulates the tagging and recovery method that is used by scientists to estimate animal populations. You attempt to estimate the bass population in a warm water, bass-bluegill farm pond. Tagged fish are released in the pond and samples are recovered at timed intervals. By presenting a detailed simulation of real sampling by "tagging and recovery," TAG helps you to understand this process.

BUFFALO simulates the yearly cycle of buffalo population growth and decline, and allows you to investigate the effects.

Ecology Simulations, 2

Cassette CS-1206 16K \$24.95

POLLUTE focuses on one part of the water pollution problem: the accumulation of certain waste materials in waterways and their effect on dissolved oxygen levels in the water. You can use the computer to investigate the effects of different variables such as the body of water, temperature, and the rate of dumping waste material. Various types of primary and secondary waste treatment, as well as the impact of scientific and econonic decisions can be examined.

In RATS, you play the role of a Health Department official devising an effective, practical plan to control rats. The plan may combine the use of sanitation, slow kill and quick kill poisons to eliminate a rat population. It is also possible to change the initial population size, growth rate, and whether the simulation will take place in an apartment building or an entire city



With MALARIA, you are a Health Official trying to control a malaria epidemic while taking into account financial considerations in setting up a program. The budgeted use of field hospitals, drugs for the ill, three types of pesticides, and preventative medication, must be properly combined for an effective control program.

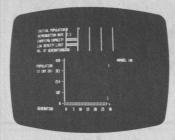
DIET is designed to explore the effect of four basic substances: protein, lipids, calories, and carbohydrates, on your diet. You enter a list of the types and amounts of food eaten in a typical day, as well as

your age, weight, sex, health, and a physical activity factor. Diet is particularly valuable in indicating how a diet can be changed to raise or lower body weights and provide proper nutrition.

Social & Economic Simulations

Cassette CS-1203 16K \$24.95

This program, based on the limit to growth study of Club of Rome, is a world model with on five major variables: population, pollution, food supply, industrial output, and resource usage. These are all linked by the birth rate, death rate, pollution generation rate, resource usage rate, industrial growth rate, and food production rate. Varying these can result in extraordinary insights into the possible future of the world.



In this program, two people compete with each other in the bicycle manufacturing business. Each has to deal with the production, the advertising, and the pricing of their products, and try to make money more quickly than his opponent.

Uspop

This program allows the user to study many aspects of the United States' demography (population change). This means that the user can investigate the effect of many social changes on population.

Haunted House

CS-1301 Cassette 16K \$14.95

Can you find your way out of a haunted house in six hours? Be careful, along the way you will encounter ghosts, (both friendly and unfriendly) spirits, a skeleton key and secret passages

Sector 3

CS-1302 Cassette 24K \$14.95

This fast-moving, real-time game places you in the role of an air traffic controller.

You control 26 prop planes and jets as they land, take off, and fly over your air space. Sector 3 offers five different radar maps, each with its own challenges and strategies, as well as added requirements such as watching the fuel supply of the planes. It gives you orders to change altitude, turn, maintain a holding pattern, approach, and land at one of two airports.

Trucker & Streets of the City

Cassette CS-1204 32K \$24.95

This program simulates coast-to-coast trips by an independent trucker. You may haul oranges, freight, or U.S. mail, All have different risks and rewards. Maximum profit comes from prudent risk-

If all goes well, you can obey the speed limits, stop for eight hours of sleep each night and still meet your schedule. Bad weather, road construction, or flat tires may put you behind schedule. You may try to increase your profit by skimping on sleep, driving fast, or carrying an overweight load.

Other factors include choice of routes, truck payments, fuel, food, tolls, and fines



Streets of the City

This simulation is modeled after Grand Rapids, Michigan, a metropolitan area with a population of 550,000. The budgeting cost and work standard bases are derived from actual statistics from the city over the past five years. The objective of the simulation is to complete ten-year plan of street and transit improvements while retaining the support of a majority of the City Commission.

During your tenure, you must construct streets and interstate highways, repair existing streets, and improve traffic safety. For the Transit Authority you have to upgrade and replace a dilapidated bus fleet, increase ridership, reduce maintenence downtime, and improve onschedule performance

Other factors to be considered are operating tax levies, construction bonding, and labor negotiations.

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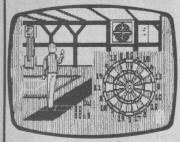
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software

ALL Atari programs are specifically for the 800 or 400 computer. They will **not** work on the Home Video Machine.

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Darts and Tilt



Darts

Enter the pub, grab a pint of lager and a handful of darts, then try for a bull's eye in this amazing graphic game. One or two players can go at it, testing their aim at ten skill levels. Whether you want to throw a few, or just show your friends what the Atari computer can do, **Darts** is an ideal addition to your software library. This is Britain's most popular Atari game

Darts 16K Cassette CS-7011 \$14.95 Tilt 16K Cassette CS-7013 \$11.95 Darts and Tilt 16K Disk CS-7506 \$24.95

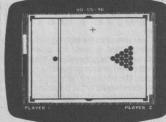
Tilt

A favorite craze for years, the familiar wood labyrinth that tilts in all directions has entered the computer age. One or two players attempt to navigate balls through a maze and into scoring holes. With nine skill levels and nine speeds, Tilt will provide hours of fun.

 1981 THORN EMI VIDEO PROGRAMMES LIMITED

Available in North America only.

Pool, Snooker, and Billiards



Billiards

This captivating British game is played with three balls on a standard pool table. Each player attempts to score by sinking a shot or hitting two balls with his cueball.

Pool, Snooker and Billiards 16K Disk CS-7509 \$24.95 Pool 16K Cassette CS-7010 \$14.95 Billiards 16K Cassette CS-7012 \$14.95

Pool

Put a games room in your computer. Old pros and beginners alike will thrill to the challenge and realism of **Pool**. From the satisfying click of a tough combination shot to the acccuracy required for a three-cushion bank, **Pool** has it all. You control the angle and force of your stroke, then watch the object ball speed toward the pocket. It's so real you can almost feel the felt.

There is a practice mode for one player, and 8-Ball and Tournament Pool for two.

Snooker

A tough British Game using 26 balls requiring the eye of sharpshooter and the strategy of a chess master. From Thorn/EMI. Not available on cassette.

1981 THORN EMI VIDEO PROGRAMMES LIMITED

Available in North America only

Advanced Air Traffic Controller



In this popular, fast-moving simulation you must successfully control the flight paths of 26 aircraft as they take off, land and fly over your airspace. You give orders to change altitude, turn, maintain, a holding pattern, approach and land at two airports. With five different airport configurations and variable skill levels, you won't easily tire of this absorbing and instructive simulation.

16K Cassette CS-7004 \$14.95 16K Disk CS-7503 \$19.95

Dominoes and Cribbage

24K Diskette CS-7507 \$19 99

Dominoes

Take on your computer at a game of draw dominoes. With options for repeating or alternating draw, **Dominoes** gives the game player a tough opponent who's always ready.

16K Cassette CS-7007 \$11.95

Cribbage

YOUR MOVE

Can you be the first to peg twice around the board? Your computer will put up a tough fight in this head-to-head game of cribbage. A graphic display of board and cards highlight this game of skill. 16K Cassette CS-7008 \$11.95

1981 THORN EMI VIDEO PROGRAMMES LIMITED

Available in North America only



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comes from prudent risk-taking.

weight load.

If all goes well, you can obey the speed

limits, stop for eight hours of sleep each night and still meet the schedule. Bad weather, road construction or flat tires

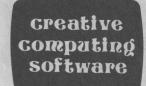
may put you behind schedule. You may try to increase your profit by skimping on sleep, driving fast or carrying an over-

Other factors are choice of routes, truck payments, fuel, food, tolls and fines. The

simulation is engrossing and informative

software

computer. They will not work on the Home Video Machine





Trucker and Streets of the City

This simulation is modeled on Grand Rapids, Michigan, a metropolitan area with a population of 550,000. The budgeting, CS-7707 Atari Disk (40K) \$24.95 cost and work standard bases are derived from actual experiences of the city over the past five years. The objective of the simulation is to complete a ten-year plan This program simulates coast-to-coast trips by an independent trucker hauling of street and transit improvements while various cargos. The user may haul oranges, freight or U.S. mail. All have different risks and rewards. Maximum profit retaining the support of a majority of the City Commission

During your tenure, you must construct streets and Interstate highways, repair existing streets, and improve traffic safety For the Transit Authority you have to up-grade and replace a delapidated bus fleet, increase ridership, reduce maintenance downtime and improve on-shedule performance

Other factors to be considered are open ating tax levies, construction bonding and labor negotiations. The simulation provides a substantial challenge and it is both educational and entertaining

Hail to the Chief



by Phillip W. Brashear Richard G. Vance

Disk CS-7701 40K \$24.95 Cassette CS-7201 32K \$24.95

Your object in this simulation is to be elected president. In your campaign you set your strategy and carry it out week by week. You may run TV or magazine ads, travel to different states, hold news conferences and participate in a debate.
You must take a position on ten campaign

issues such as Energy Policy, Unemployment, Taxes, Mid-East Policy and Strategic Arms Limitations. You must manage your fund raising efforts to business, labor and mass direct mail solicitations

The package includes four models of varying complexity; each can be used at ten levels of difficulty. The more complex models introduce the influences of incumbancy, campaign finance and spending

Hail to the Chief has been used as a teaching aid in Political Science, Voting Behavior and Computer Science at the University level since 1976. It is a well proven package which includes a comprehensive manual

riginal Adventure



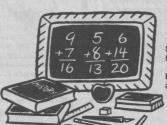
Math Games

Diskette CS-7510 \$24.95

16K Atari 400/800

Darts. How's your aim? Compete against the clock to solve addition problems to score points on the dart board. Skill levels from easy to hard.

Bomber Dynamic graphics help you with your fractions. Correct answers put you in an explosive situation!



Snoopy. Can you solve the math problems before the Red Baron shoots you down?

Easy Math. Keep your computer smiling and you learn your arithmetic

Chase Games

Diskette CS-7511 32K \$24.95

Obstacle Course. Test your reactions and compete against the clock as you move and capture pieces through and around all

Snake. Control the snake as it wriggles across the screen, keeping away from head on crashes and your opponents snake. Fast action and sound

Chase. Can you elude your pursuer? Two players take turns chasing each other through a field of obstacles. You get points for the time it takes to catch the pursued in each of several rounds

Tank. A two player game with several game options, including tunnels. You must move your laser tank between mines, trees, and walls to pursue and zap your opponent.

Trivia **Unlimited**

Disk CS-7501 32K \$19.95 Cassette CS-7001 32K \$11.95

Test your expertise in any of seven areas: science, geography, history, computers, TV and movies, English language or trivia. Speed and number of correct answers determine your score in this challenging series of mutiple-choice quizzes. Over 200 questions in all.

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Original Adventure



Advanced Air Traffic Controller



Advanced Air Traffic Controller Disk CS-3519 16K \$19.95

Original Air Traffic Controller Cassette CS-3006 16K \$14.95

These fast-moving, real-time games place you in the role of an air traffic controller. You control 26 prop planes and jets as they land, take off, and fly over your air space. Advanced Air Traffic Controller offers five different radar maps, each with its own challenges and strategies, as well as added

requirements such as watching the fuel supply of the planes. In both versions you give orders to change altitude, turn, maintain a holding pattern, approach, and land at one of two airports.

Written by an air traffic controller, this is a realistic machine language simulation. There are 84 different skill levels, so you won't easily tire of this absorbing simulation.

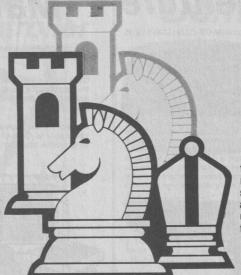
Kriegspiel and Phantom Chess

Cassette CS-3016 (16K) \$19.95

Kriegspiel is the computer version of a turn of the century Chess variation. This two player game uses the computer to act as the referee. Each player knows the position of his pieces and also receives incomplete information as to the location of his opponents pieces. It is recomended that a real chess board be used to visualize your opponent's board.

Phantom Chess is a variation on the rules of Kriegspiel for two players. The rules of Phantom Chess are different in that the rules for check do not apply. The computer also acts as the referee in this game.

These engrossing games will keep you and your friends competing for hours.



Z-Chess III

Cassette CS-3017 16K \$19.95 Diskette CS-3513 32K \$24.95

Seven different skill levels provide practice for the beginner as well as challenge for the more experienced player. Even at the highest skill levels this is one of the fastest programs available. Z-Chess III also allows you to set up special board positions, such as mate-intwo problems, for the computer to solve.

Classic Games Pack

Diskette CS-3512 16K \$19.95

Classic Games Pack is a collection of 13 fine games for the TRS-80. Games Pack includes space, strategy, battle, and board games designed to give the user hours of fun and entertainment.

This package includes Star Lanes, in which you operate an intergalactic shipping company. Tank Battle will test your cunning and

skill as you try to evade the enemy's fire. Qubic is a three dimensional version of tictac-toe. Backgammon is the computer version of a classic favorite. Also included are Ultra Trek, Wumpus I and II, Flip Disk, Mugwump, The Masters, Sub Hunt, Get Across, and Kaleidoscope.

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Ecology Simulations - I | Ecology Simulations - II

Cassette CS-3201 \$24.95 Disk CS-3501 \$24.95

STERL allows you to investigate the effectiveness of two different methods of pest control-the use of pesticides and the release of sterile males into a screw-worm fly population. The concept of a more environmentally sound approach versus traditional chemical methods is introduced. In addition, STERL demonstrates the effectiveness of an integrated approach over either alternative by itself



Requires 16K TRS-80 Requires 32K TRS-80

The POP series of models examines three different methods of population projection, including exponential, S-shaped or logistical, and logistical with low density effects. At the same time the programs introduce the concept of successive refinement of a model, since each POP model adds more details than the previous one.

TAG simulates the tagging and recovery method that is used by scientists to estimate animal populations. You attempt to estimate the bass population in a warm-water, bassbluegill farm pond. Tagged fish are released in the pond and samples are recovered at timed intervals. By presenting a detailed simulation of real sampling by "tagging and TAG helps you to understand

BUFFALO simulates the yearly cycle of buffalo population growth and decline, and allows you to investigate the effects of different herd management policies. Simulations such as BUFFALO allow you to explore "what if" questions and experiment with approaches that might be disatrous in

Cassette CS-3202 \$24.95 Disk CS-3502 \$24.95

POLLUTE focuses on one part of the water pollution problem; the accumulation of certain waste materials in waterways and their effect on dissolved oxygen levels in the water. You can use the computer to investigate the effects of different variables such as the body of water, temperature, and the rate of dumping waste material. Various types of primary and secondary waste treatment. as well as the impact of scientific and economic decisions can be examined



Requires 16K TRS-80 Requires 32K TRS-80

In RATS, you play the role of a Health Department official devising an effective, pratical plan to control rats. The plan may combine the use of sanitation and slow kill and quick kill poisons to eliminate a rat population. It is also possible to change the initial population size, growth rate, and whether the simulation will take place in an apartment building or an eintire city

With MALARIA, you are a Health Official trying to control a malaria epidemic while taking into account financial considerations in setting up a program. The budgeted use of field hospitals, drugs for the ill, three types of pesticides, and preventative medication, must be properly combined for an effective control program

DIET is designed to explore the effect of four basic substances, protein, lipids, calories and carbohydrates, on your diet. You enter a list of the types and amounts of food eaten in a typical day, as well as your age, weight, sex, health and a physical activity factor. DIET is particularly valuable in indicating how a diet can be changed to raise or lower body weights and provide proper nutrition

Social & Economic Simulations

Diskette CS-3508 (32K) \$24.95 Cassette CS-3204 (16K) \$24.95

This program, based on the limits to growth study of the Club of Rome, is a world model with five major variables: population, poli-ution, food supply, industrial output, and resource usage. These are all linked by the birth rate, death rate, pollution generation rate, resource usage rate, industrial growth rate, and food production rate. Varying these can result in extraordinary insights into the possible future of the world.

In this program, two people compete with each other in the bicycle manufacturing business. Each has to deal with the production, the advertising, and the pricing of their



products, and try to make more money than

This program allows the user to study many aspects of the United States' demography (population change). This means that the user can investigate the effect of many social changes on population.

Trucker Streets GUTY BUS the City CO. TELSO Streets of the City

Disk CS-3703 32K \$24.95

This program simulates coast-to-coast trips by an independent trucker hauling various cargos. The user may haul oranges, freight or U.S. mail. All have different risks and rewards. Maximum profit

comes from prudent risk-taking.

If all goes well, you can obey the speed limits, stop for eight hours of sleep each night and still meet the schedule. Bad weather, road construction or flat tires may put you behind schedule. You may try to increase your profit by skimping on sleep, driving fast or carrying an overweight load

Other factors are choice of routes, truck payments, fuel, food, tolls and fines. The simulation is engrossing and informative.

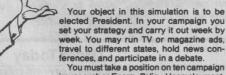
This simulation is modeled on Grand Rapids, Michigan, a metropolitan area with a population of 550,000. The budgeting, cost and work standard bases are derived from actual experiences of the city over the past five years. The objective of the simulation is to complete a ten-year plan of street and transit improvements while retaining the support of a majority of the City Commission

During your tenure, you must construct streets and Interstate highways, repair existing streets, and improve traffic safety. For the Transit Authority you have to upgrade and replace a delapidated bus fleet, increase ridership, reduce maintenance downtime and improve on-shedule perfor-

Other factors to be considered are operating tax levies, construction bonding and labor negotiations. The simulation provides a substantial challenge and it is both educational and entertaining

Hail to the Chief

Diskette CS-3701 (48K) \$24.95



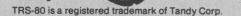
issues such as Energy Policy, Unemployment, Taxes, Mid-East Policy, and Strategic Arms Limitations. You must manage your fund raising efforts to business, labor, and the general public through direct solicitations

The package includes four models of varying complexity; each can be used at ten levels of difficulty. The more complex models introduce the influences of incumbancy, campaign finance, and spending

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Professional Software for TRS-80 computers



Investment Analysis

CS-3305 Cassette (32K) \$24.95

This program was originally developed for personal use by an investment specialist. Creative Computing Software now makes this package available for you to analyze your investments and investment decisions. Programs in this package include regression analysis, stock market simulations, market/stock values, risk analysis, time related investments, and tax analysis.

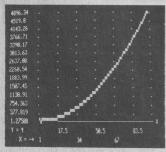
Graphic Package

CS-3301 Cassette (16K) \$19.95 CS-3801 Diskette (32K) \$24.95

This package provides a variety of interesting and useful graphing routines. Graphing Package combines text and TRS-80 graphics to plot a variety of functions and other graphs.

1. Bar Graph

Bar Graph plots graphs for up to six different categories. An optional display does conversion to a line graph.

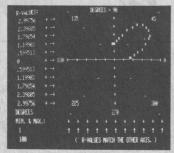


2. Cartesian Coordinate Graphing

This program plots a standard X, Y graph from a user entered function. A special feature of this program automatically scales of the Y-axis.

3. Polar Coordinate Graphing

Rarely found in computer graphing packages, this polar



graphing program provides plots of polar functions. The program labels all axes, features automatic scaling, and lets you input the range and increment of the plot. A unique and valuable program.

4. Parametric Graphing

Parametric functions are functions in which both x and y are expressed in terms of an independent variable t. The resulting graph is X vs. Y. This program allows the user to input two parametric functions and produces a graph.

5. Linear and Parabolic Regression

These two programs are used for data analysis which can later be entered into the graphing routines. Regression routines analyze how well a series of points fit on a linear or quadratic function.

Advanced Statistics

CS-3303 Cassette (16K) \$24.95

CS-3505 Disk (32K) \$24.95

This package may be the ultimate in statistical applications for the TRS-80. Advanced Statistics will provide you with the ability to perform statistical tests never before available on small computers. Its cassette based data file system allows you to store, retrive and transform data files for use in several different tests.

1. File Manager

File Manager, the heart of the statistical file management, allows you to create, edit, and transform data files. Unique to this program are features that allow the user to perform transformations on variables, extract and create subfiles, and selectively copy records. Up to twenty variables and an unlimited number of cases can be processed.

2. Descriptive Statistics

Descriptive Statistics computes the mean, standard deviation, standard error of estimate, variance, skewness, kurtosis, range, median, and quartiles for a variable and constructs a histogram for each value. A test scoring option for conversion of raw scores into percentiles is included.

3. Two Variable Statistics

This program calculates descriptive statistics for each variable. It performs a t-test for the difference of means, computing the product-moment correlation coefficient and its associated significance level. In addition, it performs linear regression and computes standard error of estimate for Y.

4. Crosstabulation

This program constructs contingency tables for displaying frequencies, column percentages and table-wide percentages for each cell. It computes the Chisquare, the level of significance and gamma statistics. Tables as large as 10x10 may be evaluated.

5. Regression-Trend Analysis

This program computes least-squares regression coefficients from time-series or paired data for best-fit equations (linear, parabolic, hyperbolic, logarithmic, power, exponential and cubic types). Calculates standard error of estimate for each equation and more.



6. Multiple Linear Regression

Performs multiple linear regression using up to ten independent variables. The program computes both unstandardized and normalized coefficients, covariance, multiple correlation coefficient, and the standard error of estimate.

STANDARD CORRELATION COEFFICIENTS				
VORTABL	rs	COWARIANCE	CORRELATION	SIGHIFICANCE: PK
		.661373	.813248	.82
	3	.58891	.767485	.85
1		.19753	.44444	M.S.
2 :	3	.794967	.839687	
2 4		.2888%	.536746	M.S.
3 4		.637969	.79873	.82
6 DEGREES OF FREEDOM				
PRESS ENTER TO CONTINUE?				

7. Correlation Analysis

Computes product-moment correlation matrices, multiple correlation coefficients and partial correlation coefficients with their associated significance levels.

8. Analysis of Variance

This program performs one-way and two-way analysis of variance for a maximum of ten groups in each control variable. Statistics include the mean and standard deviation for each group, sum of the squares, degrees of freedom, mean square, F-ratios, and significance level

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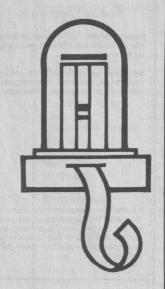
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software

Stock & Options Analysis

Disk CS-3801 (32K), \$99.95

Should you hedge, buy, or sell out? Stock and Options Analysis puts a securities advisor in your computer, providing you with four powerful investment tools. Option gives important indices for opening and closing call option transactions. Opgraph presents a graph or table of profit for any combination of long or short calls, puts, and stocks. This allows the detailed evaluation of three types of hedges. Newprem helps predict the future premiums of an option at any desired time and future stock price. Portval lets the computer do the paper work, providing full portfolio services, including value per share current value, and capital gain. The program includes the effects of commissions, margin interest and dividends. Beyond helping to organize and evaluate your present portfolio, Stock and Options Analysis is an excellent for planning and testing The comprehensive 24-page strategies. manual with this package not only shows how the programs work, but is also a primer on the strategy of hedging listed options against common stocks. This strategy has been repeatedly shown to actually be more conservative and more consistently profitable than straight buying and selling of stocks.



Solar Energy Analysis

Disk CS-3802 (32K) \$99 95

F-Chart Solar Energy Analysis eliminates many of the tedious calculations required when designing solar-heating systems: Beyond providing a thermal analysis, the program allows designers to quickly determine the effects of changing any specifications, allowing fast, accurate, and inexpensive experimentation

Systems using air, liquid, or domestic hot water in any climate can be analyzed in detail. The program expands the traditional

ves in domestic hot water systems. F-Chart Solar Energy Analysis quickly pays for itself by freeing you from time-consuming calculations

The disk version of the program includes a data base of all necessary climatic data for any location in the United States.

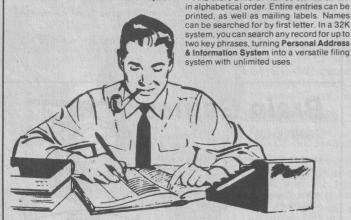


Personal Address and **Information System**

Disk CS-3509 (32K) \$24.95

Is your address book beginning to resemble a heavily-edited inkblot? Do your friends keep moving, forcing you to cross out and rewrite addresses and phone numbers? Let the Personal Address & Information System

You can store all the crucial information. including name, address, home and work phone numbers, spouse's name, and comments or remarks. At any time, the information can be edited or changed. And there's more. Names can be sorted



Text Processing and Checking Account

CS-3504 Disk (32K) \$24.95

This program turns your TRS-80 and lineprinter into a line oriented text-processing

>1 THIS IS THE MARKELOUS DEEATIVE COMPUTING TEXT PROCESSOR
>2 IT CAN DO NOMY MONDERFUL THINKS, BUT IT CANNOT RUN YOUR
>3 ELECTRIC BLANGET. IT IS ANNING HOM MARY PEOPLE MART
4 A TEXT PROCESSOR TO TURN ON THE COPTE POT AND RUN THE
>5 ELECTRIC BLANGET. BUT I AN HOT A DEAY OFE AND CAN DEAT
>6 DO HUNDAME THINKS LIKE CHEM ON CARPETING AND EAT SMALL
>7 BOYS.

Developed exclusively for the TRS-80 this program lets you use the computer to enter general text or business letters, edit and modify your work, save text on cassette tapes, and print out a perfect report, document, or letter every time.

CONTINUE LIST ON SCREEN DELETE LINE EDIT INSERT LINE RESUME KEYING LIST ON SCREEN PRINT HARD COPY QUIT PROGRAM SAVE ON TAPE COMMAND?

Editing commands are similar to those used in Level II BASIC, so there are no complicated new commands to learn. Lines may be either inserted or deleted. A special format is available to speed entry of business letters. Final printout can be done in numbered pages and you may print multiple

Business Address & Information System

Disk CS-3510 (48K) \$24.95

Do you need quick access to business contacts and customers? Put more organization in your organization with the Business Address & Information System. A complete file containing company name, address, phone number, and comments can be quickly entered and stored. Information can be

changed or edited whenever necessary The program allows entire entries to be printed, and can also generate mailing

When you need information fast, you can search for specific names or find all entries that contain one or two key phrases. Any key phrases can be used. Business Address & Information System will help you make the most of your time, putting the routine work in the computer where it belongs

CS-3203 Cassette (16K) \$14.95 This program will not work on the Model III.

IQ Tests have been the subject of a great deal of controversy in the past few years.

can find out with our IQ test

Taking advantage of the TRS-80's graphic capabilities, this test consists of 60 multiple choice questions. A special machine language routine does the scoring of the test Yet, few of us know our IQ scores. Now you and makes cheating almost immpossible.



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T199/4

Air Traffic Controller

Cassette CS-5008 (8K) \$11.95



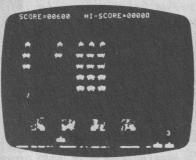
This fast-moving, real-time game places you in the role of an air traffic controller. You control 26 prop planes and jets as they land, take off, and fly over your air space. Air Traffic Controller offers a radar map, with its own challenges and strategies. This version gives you orders to

change altitude, turn, maintain a holding pattern, approach, and land at one of two airports.

Written by an air traffic controller, this is a realistic machine language simulation. There are 84 different skill levels, so you won't easily tire of this absorbing simulation.

Super Invasion

CS-5011 Cassette (8K) \$19.95



In this classic arcade game fifty-five alien creatures move across the screen, descending as they go. You control a laser cannon with which you try to destroy them before they reach you. Initially you are given three lasers and four blockades to stop their shots, but they may not last long. SUPER INVASION uses the

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Know Yourself

Cassette CS-6301 \$11.95

3 Programs

Psychoanalysis. Your feelings, phobias, and mental health are analyzed and explained by the computer.

Sex Roles. Are you androgynous? Examine your nature, behaviour, and attitudes with reference to changing sex roles in society



Alcohol and Behavior. How many is one too many? The computer analyzes your body weight, the time you are drinking, and the number and type of your drinks to predict your likely behavior. Don't leave the party without it!

Strategy Games

Cassette CS-6003 \$11.95

4 Programs



Blockade. A challenging war of dexterity and quick thinking for two persons. Trap your opponent with a moving wall.

Tunnel Vision. Play this before visiting the Minotaur! You are lost in a maze, with a three dimensional view of your surround-

Checkers. Can you beat the mechanical mind of the computer?

Depth Charge. Use logic to outwit the sub commander and sink him before he sinks

Brain Games

Cassette CS-6002 \$11.95

3 Programs

Dueling Digits. Repeat a sequence of numbers selected by the computer. How far can you get? Includes sound effects.

Parrot. Dueling Digits using letters instead of numbers. Much harder. How good are you?

Darts. Consider the wind and throw your



Strategy and **Brain Games**

Disk CS-6501 \$24.95 This disk contains all seven games listed above.

All disks except CS-9004 require 48K and Microsoft Basic. All 8" CP/M cost \$24.95.



Basic Games-1, CS-9001

Dice

Digits

Even Wins I

Flip Flop

Football 1

Football II

Fur Trader

Gomoko

Guess

Hello

Gunner

Hammurabi

Hangman

Hexapawn

Golf

Even Wins II

Includes the Following: Acey Ducey Civilwar Amazing Combat Animal Craps Awari Cube Depth Charge Bagels Banner Diamond

Basketball Batnum Battle Blackiack Bombardment Bombs Away

Bounce Bowling Boxing Bug Bullfight Bullseye Bunny

Buzzword Calendar Change Checkers Chemist Chief Chomp

Basic Games-2, CS-9002

Includes the Following: Horserace

Hurkle Kinema King Letter

Life Life For Two Literature Quiz Love Lunar LEM Rocket Stars

Madlib Mastermind Math Dice Mugwump Name Nicomachus Nim Number One Check Orbit Pizza

Poetry

Poker Hi-Lo High I-Q Qubic Queen Hockey Reverse Rocket

Rock, Scissors, Paper Roulette Russian Roulette

> Salvo Sine Wave Slalom Slots Splat

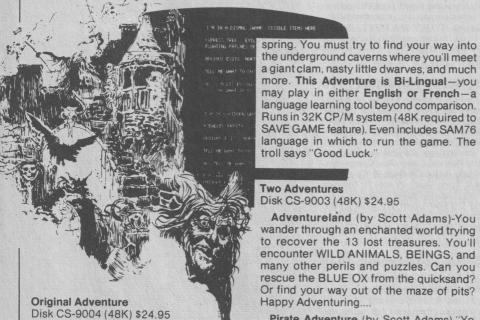
Stock Market Super Star Trek Synonym Target

Trek Instructions 3-D Plot 3-D Tic Tac Toe Tic Tac Toe

Towers Train Trap 23 Matches War Weekday

Word

ADVENTURE



(by Crowther, Woods, Manning and Roichel)-

Somewhere nearby is a colossal cave where

others have found fortunes in treasures and

gold, but some who have entered have never

been seen again. You start at a small brick

building which is the wellhouse for a large

Two Adventures Disk CS-9003 (48K) \$24.95 Adventureland (by Scott Adams)-You

troll says "Good Luck.

wander through an enchanted world trying to recover the 13 lost treasures. You'll encounter WILD ANIMALS, BEINGS, and many other perils and puzzles. Can you rescue the BLUE OX from the quicksand? Or find your way out of the maze of pits? Happy Adventuring....

a giant clam, nasty little dwarves, and much

more. This Adventure is Bi-Lingual-you

may play in either English or French-a

language learning tool beyond comparison.

Runs in 32K CP/M system (48K required to SAVE GAME feature). Even includes SAM76 language in which to run the game. The

Pirate Adventure (by Scott Adams)-"Yo Ho Ho and a bottle of rum..." You'll meet up with the pirate and his daffy bird along with many strange sights as you attempt to go from your London flat to Treasure Island. Can you recover LONG JOHN SILVER's lost treasures? Happy sailing matey....

Basic Games-3, CS-9005

Includes the Following:

Artillery-3 Dodgem Baccarat Doors Drag Race Bible Quiz Big 6 Dr. Z Binary Eliza Blackbox Father Bobstones Flip Bocce Geowar Boga II Grand Prix Bombrun Guess-It Bridge-it ICBM Camel Ink Blot Chase Joust

Chuck-A-Luck Jumping Balls Close Encounters Keno Column L Game

Concentration Life Expectancy Condot Lissajous Convoy Magic Square Man-Eating Rabbit Corral Countdown Maneuvers Maze Cup Dealer's Choice Millionaire

Motorcycle Jump Deepspace Defuse Lewis

Basic Games-4, CS-9006

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Vol. 3, No. 6-Nov/Dec 1977

Programming Techniques; File Structures; CAI; Multiple Problem Types: Computer History Quiz; Final Exams by Computer; Dwyer: 8 Hour Course in Basic—Part 3. Mastermind II, Othello, and Inorganic Chemistry Programs. Evaluations: Nine Microcomputer-based Toys, Comp IV, S-100 Compatible Kits, TDL Xitan, and Three 8080 8K Basics.

Vol. 4, No. 4-July/Aug 1978

Features on Business Computing and Word Processing: Special Section on Interfacing Your Computer to the Outside World; Three Perspectives on Video Games; ROM Section; High Resolution Graphics for Apple II; GAMMON and EVILK Motor Cycle Jump Game Programs. Evaluations: Pet, Apple II, Atari Video Pinball, Atari Video Computer.

Vol. 4, No. 5-Sept/Oct 1978

Educational Features; 4 Simulation Articles; Accounts Receivable Systems; Real World Games; A Real-Time Clock You Can Build; All about PASCAL; Intelligent Videodiscs; 40 Programming Ideas; ROM Section; Hex and Star War Games. Evaluations: Exidy Sorcerer, Radio Shack TRS-80, Bally Arcade, Speak & Spell and Spelling B, Computalker Speech Synthesizer, Peninsula Pet Cassettes, Merlin Video Interface.

Vol. 4, No. 6-Nov/Dec 1978

Consumer Computers Buying Guide; Critical Path Analysis; Experiment in Teaching Strategic Thinking; ROM Section; Subject Index and File Index in Basic. Programs for Mail Lists, Patterns, Plotting, Corral, Joust, Puzzle, and a Christmas Letter. Evaluations: CP/M Disk Operating Systems, NorthStar Horizon, Backgammon Computers, Smart Electronic Games and Video Games.

Vol. 5, No. 1-January 1979

Computers and Robots in Fiction; Guidance Counselor System; Survey of Educators' Attitudes; How to Hide Your Basic Program. A Program to Calculate Depreciation for Taxes, and the Space Maze Game. Counterfeit Cursor and Speed Reading for the PET. Evaluations: Microsoft Fortran 80, Structured Programming with Tiny c, Smoke Signal's Text Editor, Exidy Sorcerer, Ohio Scientific Superboard II.

Vol. 5, No. 2-February 1979

Multiple Regression Analysis Simplified; Budget Management: Sports Predictions; PEEKing and POKEing for Video Displays; Interview with Michael Shrayer; Computers and Education—Questions of Value; Game Programs for Gold Mine and Atom 20. Evaluations: Heathkit H-8, Thinker Toys Floppy Disk, Electric Pencil, Western Digital Pascal Chip Set, Four Computer Music Records

Vol. 5, No. 3-March 1979

Six Articles on Data Base Management; Sports Judging on a Microcomputer; Shopping for a Payroll System; Programming the Game of Go; Business Computing with the Sorcerer; Social Science Survey Program. Evaluations: Terrapin Turtle, VideoBrain, PET Monitor, TRS-80 Floppy Disk, Apple Floppy Disk.

Vol. 5, No. 4-April 1979

Safeguarding Your Computer; Interpretive Programming; Elements of a Good Computer Game; Music Composition; Marin Computer Center. Programs for an Intelligent Calendar, Vertical Graphs and Bar Graphs, Flowers for the PET. Evaluations: Checker Challenger, Video Checkers, Checkbook Maintenance System, Whatsit Data Base Management Program.

Vol. 5, No. 5-May 1979

Word Processing Systems; Pilot Tutorial; Writing User-Oriented Programs; Amoritization Schedules, Reading and Comprehension Exams; Hiding Your Basic Program; Cribbage and Mille Bornes Game Programs. Evaluations: WP Daisy Word Processing, Wordmaster Text Editor, PDI IQ Builder, Malibu 160 Line Printer.

Vol. 5, No. 6-June 1979

Eight Articles on Computer Graphics and Plotting; Using Basic Strings; Microcomputers in the Hospital; Billing Program for the Sorcerer. Inkblot and Greed Game Programs. Evaluations: TRS-80 Voice Synthesizer, HIPLOT Digital Plotter, Structured Systems, Name and Address Program, ALF/Apple Music Synthesizer.

Vol. 5, No. 7-July 1979

Four Features on Sorting, Files and Data Bases; Creativity Test; World Power Systems; Personal Finance Model; Two Ecological Simulations; Programs for an Ecological Game, Niche. Brain Teaser, and Zone X. Evaluations: BrighterWriter, SWTPC CT-82 Graphics Terminal; APF PeCos One; Heuristics Speechlab; Micro Pro Super Sort; Diagnostic Programs for the PET.

Vol. 5, No. 8-August 1979

Can Computers Think?; 5 Basic Language Programming Techniques; The Law and Your Computer; muMath; Image Processing; Manipulating Pencil Files; Adventure: a new type of computer game simulation. The Games HVOLT and FORT. Evaluations: Texas Instruments 99/4; Radio Shack TRS-80 Model II; SWTPC PR-40 for the Pet; IMSAI VIO.

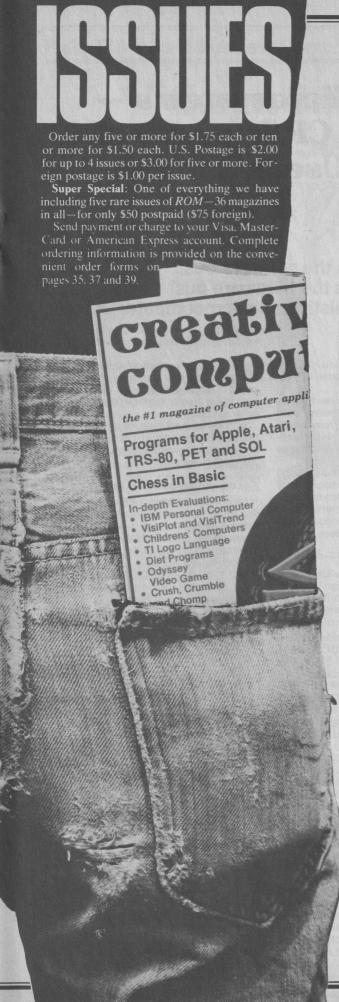
Vol. 5, No. 11-November 1979

Adventure: Complete Listing in Basic. Controlling Household Devices; Car Pooling; Mumps Language; Computer Art Exhibition. Build Your Own Joysticks; Telephone Dialer for TRS-80 or NorthStar; Teacher-Made Tests. Evaluations: Comparison Chart of 6 Popular Personal Computers; Comparison of 26 Single Board Computers; Electronic Games & Toys; Quick Printer II; Interact Computer; User-Definable Character Generators; TRS-80 Level III Basic; PET Software from Creative Software; Word Processor; Introl X-10 Home Control System.

Vol. 5, No. 12-December 1979

Controlling Household Devices: Part 2; LOGO; Computerized Biofeedback; Computers at the Rodeo; Creating Digitized Video Images. Programs for using the Microcomputer as an Investment Tool; Animation on the Apple; Magic Tricks; "Turn-Key" CP/M System. Evaluations: More Electronic Games; Language Translators; APF MP1000 Video Game System; 6 Word Processing Printers; Satellite Tracking Software; SysKit for the 8080; Assemblers; CP/M vs. TSC; Statistics for the TRS-





Vol. 6, No. 1-January 1980

Interviews with Donald E. Knuth and William Wulf; Six Features on Artificial Intelligence; Air Traffic Controller; Computerized Resume; GROW: A Program that Learns; Evaluations: Six Basics; NEWDOS and TRSDOS; Auto Scribe; Micro Music.

Vol. 6, No. 2-February 1980

Six Articles on Investment Analysis; David Levy: Intelligent Computer Games; Programs: Geneology, Graphing, Genetics. Evaluations: Word Star vs Electric Pencil; Pascal for the TRS-80; Micro Composer; Data Dubber; Sorcerer Word Processing Pac; Trivia Contest Results.

Vol. 6, No. 4-April 1980

Dr. KiloBYTES's Creative Popular Personal Recreational Micro Computer Data Interface World Journal—the Famous 73 page April Fool parody. 8 Articles on Reading and Language; Interview with Gordon Bell; Evaluations: Heath WH-89; Atari 800 vs PET; Chatsworth Mark Sense Card Reader; Adventure.

Vol. 6, No. 6-June 1980

Fourteen Graphics Articles: Polar Plots, 3-D Graphics, Animation, Graphic Mazes, Motion Simulation, Inside Space Invaders. 7 Music Articles: Digital Audio, Computer-Aided Sight Reading, Design of a Synthesizer, Digital Enhancement of Old Recordings. Comparison of Printers; Evaluations: The Atari Machine, Neelco's Music Box for the PET, HeathKit-Thomas Electronic Organ Kit.

Vol. 6, No. 7-July 1980

Four Articles on Adventure Games: Dragon, Dungeon, How to Fit a Large Program into a Small Machine, How to Write an Adventure. 6 Simulation Features: Genetics, Electric Management, Medical, Ecological, Sports. Self-Reproducing Programs: Man-Machine Dialogs; Selecting a Computer Dealer. Evaluations: Super-Text vs. Easy Writer; Mountain Hardware ROM PLUS+; Toolkit for the PET; Chart Comparing Basics of 8 Popular Computers.

Vol. 6, No. 8-August 1980

Games Features: Computer Bismarck, Knight's Tour, Guess My Animal, Turnablock Game, Fifteen and Hot, Mind Exerciser. Marketing Your Own Program; Computer Graphic Design; Robotics Conference; Insertion Sort; Stocks and Listed Options. Evaluations: Magic Wand, VisiCalc, Beta-80, Asteroids in Space.

Vol. 6, No. 9-September 1980

Twenty Educational Applications and Features: Language Arts CAI Development, Grading Program, Computers in the Classroom. Asimov: Point of View; How to Heaspsort; New Consumer Electronics Products; TRS-80 Shopping List for Schools. Evaluations: Milliken Math Sequences; Exatron Stringy Floppy; EDS Videotape Series "Little Computers—See How They Run"; 8 Apple II Software Packages; Educational Packages.

Vol. 6, No. 10-October 1980

Symposium on Actor Languages and Smalltalk, Linked Merge Sort; How to Solve It; 9 New Applications and Games: Election Prediction, The Presidential Campaign. Computer Division Evaluations: OSI C2-4P Computer, TRS-80 Voxbox, Two Text Editors, Five Music Systems, 15 Software Packages, BASEX.

Vol. 7, No. 2-February 1981

Comparison of Music Editors; Artificial Intelligence; Are Computers Alive?; Genetics Simulation in Pascal; National Programming Contest; Monster Combat; Introduction to Computer Control.

Vol. 7, No. 3-March 1981

Education; MECC In-Depth; Selecting a Computer; CAI; Prize-Winning Simulation; Commercial Software Evaluations; Fantasy Games; Show and Spell; Cutting Your Taxes; PET Word Processor; Space Invaders Championship; Microcomputers and Hyperactive Children; Realistic Simulations; 25 New Products.

Vol. 7, No. 4-April 1981

Networks and Telecommunication; Home Banking; Osborne I; ABM; New Horizons for the Apple; Column Board Comparison; Computerized Writer; Space Games; Small Computers in Big Business.

Vol. 7, No. 5-May 1981

Buyer's Guide to Small Business Computers; Bombproof Data Entry; Personal Finance; Home Accounting: Programs for the Investor; Financial Programming Language; Short-Range Forecasting; Fuel Economy Comparison Program; Music Synthesis Past and Future.

Vol. 7, No. 6-June 1981

Graphics and Animation; Interview with Leo Christopherson; Alien; OSI; Computers of Hollywood; Colored Tapestries; Computer Warfare; Digital Music Synthesis; Hi-Res Graphics for the TRS-80; Fantasy Games Old and New; Funny Numbers; Spiderman.

Vol. 7, No. 7-July 1981

Printers and Word Processing: Scripsit vs. Electric Pencil, Microline 82, Lazywriter, Paper Mate, Epson MX-80, Dynatyper; Computer Othello Tournament; Digital Music Synthesis; Atari Graphics; Computer-Assisted Proofreading.

Vol. 7, No. 8-August 1981

The Origin of Spacewar; Microcomputer Chess Tournament; Nuclear Power Plant Simulation; Evaluations: Apple Silentype Printer, TI 99/4 Music Maker, Hi-Res Cribbage, Apple-oids.

Vol. 7, No. 9-Buyer's Guide

Buyer's Guide: Personal Computers, Video and Electronic Games, Consumer Electronics, Which Computer Is For You?, What To Buy Under \$1000, VIC-20, Xerox Personal Computer, Printers, Monitors, Memory, Music Synthesizers, Plotters, Voice Synthesis, Home Computer vs. Video Game, New Games for Atari VCS, Learning Aids, Video Products.

Vol. 7, No. 10-October 1981

Educational Applications; Computer Tutor; Educational Software; Preschool Games; Xymec Printer; Cardreaders; Hi-Res Soccer; Nursery Rhymes to Shakespeare; Computers in Britain; PLATO; Simulations in the Classroom; Speed Reading; Aircraft Rescue; Wombats.

Vol. 7, No. 12-December 1981

Chess in Basic; Evaluation of IBM Personal Computer; VisiPlot and VisiTrend; Children's Computers; TI Logo Language; Diet Programs; Odyssey; Seeing Eye Computers; Arrays and Matrices; Model of a Solar System; Murphy's Eleventh Law; Seymour Papert.



Microsystems – the CP/M*and S-100 User's Journal

CP/M is the software bus! S-100 is the hardware bus! for sophisticated microcomputer users!

If you are a CP/M user, on any system—S-100, Apple, TRS-80, Heath, Ohio Scientific, Onyx, Durango, Intel MDS, Mostek MDX, etc—after all CP/M is the Disk Operating System that has been implemented on more computer systems than any other DOS—then *Microsystems* magazine is the "only" magazine published specifically for you!

Or, if you use an S-100/IEEE-696 based computer—and the most sophisticated microcomputer systems available use the S-100/IEEE-696 hardware bus—then *Microsystems* magazine is the "only" magazine published specifically for you!

We started publishing *Microsystems* almost two years ago to fill the void in the microcomputer field. There were magazines catering exclusively to the TRS-80, Apple, Pet, Heath, etc. system users. There were also broad based publications that cover the entire field but no one system in depth. But no magazine existed for CP/M users—nor did one exist for S-100 users.

The why and what of a software bus

First of all what is a "bus?" And why do we call CP/M "the software bus?"

A "bus" is a technique used to interface many different modules. Examples are the "S-100/IEEE-696 Bus" and the "IEEE-488 Bus." These are hardware buses that permit a user to plug a bus-compatible device into the bus without having to make any other hardware modifications and expect the device to operate with little or no monification

CP/M is a Disk Operating System (DOS). It was first introduced in 1974 and is now the oldest and most mature DOS for microcomputer systems. CP/M has now been implemented on over 250 different computer systems. It has been implemented on hard disk systems as well as floppy disk systems. It is supported by two user groups (CP/M-UG and SIG/M-UG) that have released over sixty volumes containing over 1,600 public domain programs that can be loaded and run on systems using the CP/M DOS. Add to this another 1,500 commercially available

CP/M software packages and you have the largest applications software base in existence.

CP/M is the only DOS for micros that has stood the test of time (seven years) with the highest level of compatibility from version to version. And over the years this compatibility has been maintained as new features have been added.

This is why we say "CP/M is the software bus" and why *Microsystems* magazine is vital to providing CP/M users with technical information on using CP/M, interfacing to CP/M, new CP/M compatible products and for CP/M users to exchange ideas.

Why support the S-100 bus?

S-100 is currently the most widely used microcomputer hardware bus. It offers advantages not available with any other microcomputer system. Here are a few of the advantages:

S-100 is processor independent. There are already thirty different S-100 CPU cards that can be plugged into an S-100 bus computer. Nine 8-bit microprocessors are available: 6502, 6800, 6802, 6809, 2650, F8, 8080, 8085 and Z80. Eight 16-bit microprocessors are available: 8086, 8088, 9900, Z8000, 68000, Pascal Microengine, Alpha incro (similar to LSI-11) and even the AMD2901 bit slice processor. Take your pick from the incredible offerings.

S-100 has the greatest microcomputer power. What other microcomputer system has direct addressing of up to 16 megabytes of memory, up to 65,536 I/O ports, up to 10 vectored interrupts, up to 16 masters on the bus (with priority) and up to 10 Mhz data transfer rate? You will have to go a long way to use up that computing power.

S-100 is standardized. The S-100 bus has been standardized by the IEEE (Institute of Electrical and Electronic Engineers) assuring the highest degree of compatibility among plug-in boards from different manufacturers. And, *Microsystems* has published the complete IEEE S-100/696 standard (all 26 pages).

S-100 has the greatest hardware support. There are now over sixty different manufacturers of about 400 different plug-in S-100 boards. Far greater than any other microcomputer system.

With all these advantages is it any wonder that S-100 systems are so popular with microcomputer users who want to do more than just play games?

For the serious computer user.

Each issue of *Microsystems* brings you the latest in the CP/M and S-100 world. Articles on applications, tutorials, software development, product reviews, and lots more, to keep you on top of the ever changing microcomputer scene.

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For Example

You have just purchased a mailing list program. Everything is fine until the file has to be sorted by zip code. If the program has that capability, all is well. If not, you have a big problem. If you had just invested a few hours reading *Small Business Computers*, you would have known what functions to look for before buying the program; you would have known how to plan for future needs. That's just one example. Expand this concept into other areas, other programs and systems, and you can see what you get for your investment.



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SYNC is a Creative Computing publication. Creative Computing is the number 1 magazine of software and applications with over 150,000 circulation. The two most popular computer games books in the world, Basic Computer Games and More Basic Computer Games (combined sales over 500,000) are published by Creative Computing. Creative Computing Software manufactures over 150 software packages for six different personal computers.

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Computers for Kids by Sally Greenwood Larsen has 12 chapters with instructions for operating and programming the TRS-80, the Atari, the Apple, or the Sinclair ZX-81. The book is easy to understand and large type makes it easy to read. Children can find out how to put together a flowchart, and how to get a computer to do what they want to do. They learn how to write their own games and draw pictures that move. There's also a section of helpful hints for parents and teachers. The books include detailed lesson ideas and advice on how to fix small problems that might pop up. They cost \$3.95 each. Specify edition: Apple II, TRS-80, Atari, or Sinclair ZX-81.

Katie and the Computer by Fred D'Ignazio and Stan Gilliam.

Here is a delightful story told in words and full color drawings of Katie's adventures when she "falls" into a computer. In Katie's journey through the land of Cybernia, she meets the Software Colonel, the Bytes, the Table Manager and even a ferocious Program Bug. Her journey parallels the path of a simple command through the stages of processing in a computer, thus explaining the fundamentals of computer operation and programming to 4-10 year olds. Supplemental explanatory information is contained in the front and back end papers. 42 pages, hardbound. \$6.95.

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creative computing press



Computer Coin Games, by Joe Weisbecker, simplifies the concepts of computer circuitry through games which can be played with a few pennies and full sized playing boards in the book. With this book children or adults can understand the workings of even the most complex computer circuits. 96 pages, softbound. \$3.95.



Tales of the Marvelous Machine. In thirtyfive stories about computers, authors such as Frederick Pohl, Charles Mosmann, M.V. Mathews, Carol Cail, and George Chesbro depict a life in which computers affect the way people live, think, and relate to each other. Unique multiple tables of contents are provided, which lists the stories in fourteen different categories. Skillfully drawn illustrations augment the stories, giving glimpses of scenes as envisioned by 20 talented artists. Tales of the Marvelous Machine, edited by Robert Taylor and Burchenal Green, is a 8 1/2 x 11 softbound anthology of 272 pages. \$7.95.

Problems for Computer Solution by Stephen Rogowski offers ninety problems which are thoroughly discussed and referenced. Computer programs are provided in the following areas: algebra, geometry, trigonometry number theory, probability, statistics, calculus and science. Several unsolved problems are included to help sharpen the students' insight and awareness.

The student edition has 106 pages and includes all ninety problems, seven appendices and a complete bibliography. The cost is \$4.95.

The 182 page teacher's edition contains solutions to the problems, with listings in Basic, sample runs, and in-depth analyses explaining the algorithms and theory involved. The cost is \$9.95.

Computers in Mathematics: A Sourcebook of Ideas, edited by David Ahl, contains a supply of classroom tested ideas for using computers in mathematics instruction. This large format book contains sections on computer literacy, problem solving techniques, art and graphing, simulations, computer assisted instruction, probability, functions, magic squares and programming styles.

The book ranges from a basic introduction to binary numbers to advanced techniques like multiple regression analysis and sifferential equations. Every item discussed has a complete explanation including flowcharts, programs, and sample runs.

This mammoth softbound book includes information that was in back issues of *Creative Computing*, much of which is now out of print. 224 pages, softbound. The cost is only \$15.95.

The Impact of Computers on Society and Ethics: A Bibliography by Gary M. Abshire.

Where is the computer leading us? Is it a menace or a messiah? What are the risks? What is needed to manage the computer for society's greatest good? Will we become masters or slaves of the evolving computer technology? This is a bibliography of works dealing with the ways in which computers are being used in our society, the beneficial changes that are taking place in our lives as a result of computer technology, the social and ethical problems intensified by the improper use of computers, the dangers of computerized society, safeguards and defenses against those dangers, the attempts to indicate what computerized direction the future will take, and the responsibilities of computer professionals. It contains 1920 alphabetical entries of books, magazine articles, news items, scholarly papers and other works dealing with the impact of computers on society and ethics. This book covers 1948 to 1979. 128 pages, hardbound. \$17.95.



Best of Creative Computing Volume 1

In this 328 page book are all the articles, stories, learning activities, games, and puzzles that appeared in *Creative Computing* Volume 1. The contents cover computer applications in education and recreation. Over 200 contributors are represented from college professor to high school student, from U.S. Senator to underground cartoonist, and from corporation president to science fiction author. A must for anyone concerned with the role of and potential for the computer in society. Edited by David Ahl. Large format paperbound, 328 pages. \$8.95

Basic Computer Games is a complete anthology of 101 favorite games and simulations, each complete with sample runs, program listings, and description. All games run in standard Microsoft Basic and are easy to use with any computer. There are games just for fun, to develop logic strategies, to teach environmental solutions, to simulate athletic competition, to play alone or with a group. The 101 games offer the kind of challenge, excitement, and delight you want from your computer. Edited by David Ahl and illustrated by George Beker. Large format paperbound, 200 pages. \$7.95.

More Basic Computer Games. In this sequel to Basic Computer Games there are 84 new games to challenge you. All games are complete with program listings, sample runs, and description. All run in Microsoft Basic and are easy to use with any computer. A Basic conversion table is included.

Talk to Eliza, the psychologist, evade a man-eating rabbit, crack a safe, tame a wild horse, become a millionaire, race your Ferrari, joust with a Knight, trek across the desert on your camel, navigate in deep space, hunt a wumpus and much more.

Edited by David Ahl and Steve North, with a preface by Christopher Cerf, illustrated by George Beker. Large format paperbound, 200 pages. \$7.95.

To order send payment indicated plus \$3.00 postage and handling. Orders may also be charged to your Visa, Master-Card or American Express account by mail, or if you prefer, use our toll-free number. Complete ordering information is provided on the convenient order forms on pages 35, 37 and 39.

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Anthologies and Games



Best of Creative Computing Volume 2

336 pages of the best articles, fiction, foolishness, puzzles, programs, games and reviews from *Creative Computing* Volume 2. It contains a potpourri of information on languages and programming theory, on artificial intelligence, on computers in education and in the arts. 67 pages are devoted to puzzles, programs, and things to do. Edited by David Ahl. Large format paperbound, \$8.95.



Best of Creative Computing Volume 3

336 pages of articles, activities, fiction, games, programs, reviews, cartoons, and other information from the 1977 issues of *Creative Computing*. It includes features on technology, public access, educational use, medical applications, and computers in music. It contains great resource listings and reviews of calculators, games, equipment, software, and books. There are 96 pages of things to do- puzzles, programs, problems, and games. Edited by David Ahl and Burchenal Green. Large format paperbound, 336 pages. \$8.95.

Contents of Basic Computer Games (right) and More Basic Computer Games (below).

Artillery-3 **Baccarat Bible Quiz** Big 6 Binary Blackbox **Bobstones** Bocce Boga II Bumbrun Bridge-It Camel Chase Chuck-A-Luck Close Encounters Column Concentration Condot Convoy Corral Countdown Cup Dealer's Choice Deepspace Defuse Dodgem Doors Drag Dr. Z Eliza Father Flip Four In A Row Geowar Grand Prix Guess-It

ICBM

Inkblot

Jumping Balls

Joust

Keno

L Game

Life Expectancy Lissajous Magic Square Man-Eating Rabbit Maneuvers Mastermind Masterbagels Matpuzzle Maze Millionaire Minotaur Motorcycle Jump Nomad Not One Obstacle Octrix **Pasart** Pasart 2 Pinball Rabbit Chase Roadrace Rotate Safe Scales Schmoo Seabattle Seawar Shoot Smash Strike 9 Tennis **Tickertape** TV Plot Twonky Two-to-Ten UFO Under & Over Van Gam

The Basic Language Conversion to Other **Basics** Acey Ducey Amazing Animal Awari Bagels Banner Basketball Batnum Rattle Blackjack Bombardment **Bombs Away** Bounce Bowling Boxing Bug Bullfight Bullseve Bunny Buzzword Calendar Change Checkers Chemist Chief Chomp Civil War Combat Craps Cube Depth Charge Diamond Dice **Digits Even Wins** Flip Flop Football Fur Trader Golf Gomoko Guess Gunner Hammurabi Hangman

Hello

Hexapawn

Introduction

Hi-Lo High I-Q Hockey Horserace Hurkle Kinema King Letter Life Life For Two Literature Quiz Love Lunar LEM Rocket Master Mind Math Dice Mugwump Name Nicomachus Nim Number One Check Orbit Pizza Poetry Poker Queen Reverse Rock, Scissors, Paper Roulette Russian Roulette Salvo Sine Wave Slalom Slots Splat Stars Stock Market Super Star Trek Synonym Target 3-D Plot 3-D Tic-Tac-Toe Tic Tac toe Tower Train Trap 23 Matches War Weekday Word

Warfish

Wumpus 1

Wumpus 2

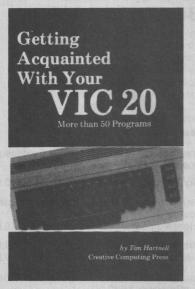
Word Search Puzzle

Books for your Computer

The Creative Apple by Mark Pelczarski and Joe Tate.

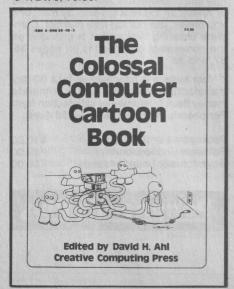
This 320 page book contains the best of the Apple-orientated articles from the past three years of *Creative Computing* with vital updates and useful information added. The contents include: graphic utilities, animation, digitized images, music editors, educational software and applications, word processing, telecomputing, home control systems, programs for the investor, break even analysis with VisiCalc, fantasy games simulations, more ready-to-run programs, tips and tricks for easier programming, the quest for the perfect printer... and more.

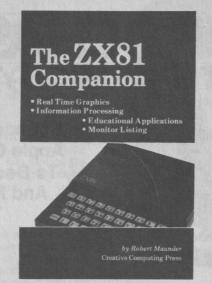
Paperback, 8 1/2 x 11, 320 pages \$15.95.



Getting Acquainted with Your VIC20 by Tim Hartnell.

This book leads the reader, step by step, from the absolute basics of programming the VIC to writing complex, sophisticated programs. Contains over 60 complete programs. Parents and teachers will find the section "VIC as a Teacher" useful in making the computer effective in the process of teaching and learning. Contains over 60 complete programs. Softbound, 132 pages, 5 1/2 x 8, \$8.95.





The ZX81 Companion by Bob Maunder.

The book assists ZX81 users in four application areas: graphics, information retrieval, education, and games. The book includes scores of fully documentated listings of short routines as well as complete programs. For the serious user, the book also includes a disassembled listing of the ZX81 ROM Monitor. Softbound, 5 1/2 x 8, \$8.95.



Computer Rage

Computer Rage is a game in which from two to four players attempt to move their playing pieces ("Programs") from start ("Input") to finish ("Output"). The players roll binary dice. When rolled, the three dice (red, blue, and green) produce a 3-bit binary number. Extra sets of binary dice are available for \$1.25 per set of five sets for \$5.00. The first player to reach the "Output" is the winner. The game involves both luck and skill, the outcome being determined both by probability and strategy. There are many parallels between the play of Computer Rage and the operation of a modern computer system. \$8.95

Colossal Computer Cartoon Book contains several hundred cartoons about robots, computer dating, computers in the office, and much more. Keep the book with your reference works. When needed, the right cartoon can say it all for you. It provides hours of fun and comic insight. Edited by David Ahl and designed by Pat Holl. Large format paperback, 120 pages. \$4.95.

The Gateway Guide to the ZX81 and ZX80 by Mark Charlton.

This educational book has more than 70 fully documented and explained programs for the ZX81 or the ZX80. The book enables the reader to get involved in the learning process of programming and encourages him to try out things as he goes. The book starts at a low level and assumes the ZX81 is the reader's first computer, however, by the end, the reader will have become quite proficient. Softbound, 5 1/2 x 8, \$8.95.



Getting Acquainted With Your ZX-81 by Tim Hartnell.

This sensible, practical and witty book introduces programming hints and techniques on the ZX-81 and includes over 70 programs, ranging from games to graphics to mathematics and finance. There are opportunities to explore the great mathematical abilities of the ZX81 through plotting cascading sine waves, printing out tables and graphs, sorting data, solving quadratic and other equations, and more! Softbound, 5 1/2 x 8, 120 pages, \$8.95.

To order send payment indicated plus \$3.00 postage and handling. Orders may also be charged to your Visa, Master-Card or American Express account by mail, or if you prefer, use our toll-free number. Complete ordering information is provided on the convenient order forms on pages 35, 37 and 39.

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SOUNDCHASER COMPUTER MUSIC SYSTEMS



The Soundchaser Gives **Apple Owners A Chance** To Become Musicians-And Musicians A Reason To Buy Apples

Your Apple Can Be the Heart of a Sophisticated Sound Studio

Would you like real music and total control? The Soundchaser Computer Music System coupled with an Apple computer produces dazzling results. While a studio synthesizer can cost as much as a small house, Soundchaser gives you a polyphonic synthesizer and multibank sequencer, with features found on most professional systems, for about the same cost as twenty hours of studio time. The system represents a new generation in music, combining computer and synthesizer hardware under the control of sophisticated software. Add a human at the keyboard and you've got a dynamite package.

The keyboard is exceptional. It is a professional, four-octave, 49-note unit housed in a handsome wood cabinet. It looks as good as it sounds. Just as important, it feels right. Installation is simple: the keyboard interface plugs into peripheral slot seven in the Apple. No special wiring or chip changes are required. As soon as you insert the card, the keyboard is ready to talk to the Apple. Add a synthesizer, and you can play live, lay down a sequence, or play over a recorded sequence.

Outstanding Synthesizer Hardware

The Soundchaser Voice Card is a computer.controlled. full-feature. dynamic synthesizer. Each card provides three voices. A two-card system with a total of six voices is recommeded, but we don't lock you into one product line. Soundchaser can sing just as well with other synthesizers, most notably the Mountain Music System. This board is highly regarded by Passport Designs and by pairing the sixteen channels, they allow the Soundchaser system to produce eight full-bodied voices.

The Software Side of the Story

A system that's hard to use is less than worthless. You want to concentrate on music, not programming. Soundchaser helps you out with intelligent and flexible menu-driven software. A highlight of the software is the Editor. With the aid of graphically displayed envelopes, slides, and switches, you can create a wide range of instrument sounds. Envelopes and oscillator waveforms are drawn right on the screen. There is no better aid for experimentation than this.

Once you create an instrument sound, it's onto the Sequencer. Here, you can record a sequence of notes, storing them in memory. Later, the sequence can be played back, using a new instrument sound if desired. You can sit back and listen, or play live over the sequence. Instruments and sequences can easily be saved to disk and retrieved, all under program control.

Added Support

Passport Designs has already produced a full series of support software to augment Soundchaser. The Notewriter displays your music in standard notation on the hi-res screen, right as you play. It lets you easily write your own lead sheets and fake books. There is no simpler way to produce sheet music, and you can obtain hard copy using virtually any graphics printer. With the Notewriter, you can compose, arrange, and transcribe without having the drudge work get in the way of your creativity

The Musictutor transforms Soundchaser into a challenging educational tool. The software includes programmed courses in ear training, music theory, and harmony. It can be used both by teachers and by individuals who want to sharpen their musical skills (curriculum outline is available upon request).

The software will continue to grow, so Soundchaser will never grow obsolete. For those with the interest and desire, the manual includes instructions for accessing the keyboard from user programs.

Soundchaser Packages

Soundchaser with Dual 3-Voice Synthesizer Boards

(Six Voices) \$1350.00

Soundchaser with Mountain Music System Boards

(Eight Voices) \$1045.00 Notewriter (1 Disk)

\$50.00 Musictutor (4 Disks) \$150.00

Soundchaser Keyboard and Interface without Synthesizers \$650.00

System Requirements

Apple II or Apple II Plus, 48K, Disk Drive, Paddles, Monitor or Television with RF Modulator (black and white or color), and printer (only required for making hard copy from Notewriter).

Write for free brochure. Dealer inquiries invited. To order your system send payment and shipping charges indicated below. Orders may also be charged to your Visa, MasterCard or American Express account by mail, or if you prefer, use our toll-free number. Complete ordering information is provided on the convenient order forms on pages 35, 37, and 39.

Your system is fully backed by a 90-day manufacturer warranty and a complete money back guarantee of satisfaction from Peripherals Plus (trial period is 30 days).

Package #1 or 2 \$10.00 Software (independently) \$2.00 Soundchaser (independently) \$6.00



ALF Apple Music Synthesizers

The ALF Apple Music Synthesizers are easy to use peripherals which allow you to program music into an Apple II computer using standard musical notation. The ALF kits include the synthesizer board (plugs into any peripheral slot), exceptional quality software, and an extensive user manual.

Sophisticated Music Entry Program

Sheet music is easily entered using the Apple games paddles. The high-resolution ENTRY program features the familiar music staff with a "menu" of musical items listed beneath it (note lengths, rests, edit commands, accidentals, etc.). One game paddle moves a cursor up and down the music staff and is used to select note pitch; the second paddle chooses from the menu items (note length, etc.). With the ALF hi-res ENTRY program, you won't have to use cryptic codes to select note parameters.

As you program sheet music with ENTRY, measure bars are inserted automatically (and note values are tied over the bar when necessary). Key signatures are also automatic—you don't have to keep writing in every sharp or flat!

AM-II

The ALF AM-II music synthesizer offers an unbeatable value for the Apple owner who is a music hobbyist. With nine voices (or parts) on a single music board for \$195.00, the AM-II is the most economical device for creating music with the Apple. Its output is stereophonic (3 voices in the left, 3 voices shared, and 3 voices in the right). By controlling the envelope (or shape) of each voice, many different instrumental sounds can be simulated.

Six Octave Range

The ALF AM-II has a pitch range of six octaves- almost as wide a range as a grand piano. The ALF can also play semitones"blue notes" or the pitches in between the keyboard notes of a piano.

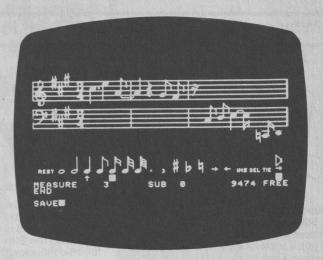
Every parameter of the ENTRY program can be changed again and again during a musical piece. For example, you can make changes in key, time signature, volume and timbre (envelope). Parts can be edited at any time, notes can be added or deleted, note length can be changed, as well as pitch, volume, etc.

You can save songs on disk and play them back using either ENTRY or PLAY. The playback speed is adjusted with one of the game paddles, and can be varied during the playback, if you wish to change the overall tempo.

Colorful Playback Display

The ALF Music Synthesizers feature a 16-color low-res graphic display during song playback. Each musical part is represented on a stylized piano "keyboard"- the intensity of the note determines the color, and the pitch is shown in relation to "middle C".

The ALF software includes the ENTRY and PLAY programs, sample songs, an introduction to "envelope shaping", and demonstrations of advanced uses of the particular synthesizer. An external audio amplifier and speakers are required.



With the ALF software, entry of music is easy, fast and accurate.

AMS

The AMS uses the same excellent ENTRY and PLAY programs as the ALF AM-II; the same hi-res graphics display from which notes are selected with the Apple game paddles (not typed with cryptic codes). All of the conveniences of the ENTRY program apply- easy editing, playback and low-res display, ability to save songs on disk, etc.

Why is the 3-voice AMS synthesizer \$50.00 more than the AM-II? The basic difference is dynamic range. The AMS has an accurate pitch range of eight octaves-a wider range than a grand piano. Its dynamic range can match that of many state of the art high fidelity components. It is ideal for professional applications. Two boards are required for stereo—a total of three can be used simultaneously for a maximum of nine voices.

Professional musicians will want to use the original Apple Music Synthesizer (AMS) for its extended range and volume controls. But for the Apple owner who is interested in music as a hobby, the AM-II is the best music peripheral value available today. Song albums on disk are now available. Write for a free listing.

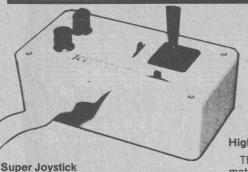
Synthesizers require: 48K Apple II or Apple II Plus, Disk II, and external audio amplifier (all necessary patch cords are included) and paddle controllers. Cassette software is available.

AM-II ALF/Apple Synthesizer-9 voice \$195.00 AMS ALF/Apple Synthesizer-3 voice \$245.00

To order send payment indicated plus \$3.00 postage and handling. Orders may also be charged to your Visa, MasterCard or American Express account by mail, or if you prefer, use our toll-free number. Complete ordering information is provided on the convenient order forms on pages 35, 37 and 39.



Why would anyone spend \$59.95 for a joystick?



Super Joystick

High-quality construction

Star Wars. Played with paddles, it's difficult at best and frustrating at worst. But with a joystick, it becomes an entirely new experience. It's still challenging. It's also fun. And very addictive.

Have you ever used a drawing program in which one paddle controls the horizontal movement of the "brush" and the other paddle the vertical? It's slow, tedious work. But with a joystick, drawing is an absolute joy.

Exceptional Precision

The Apple high-resolution screen is divided into a matrix of 160 by 280 pixels. To do precise work on this screen, you need a precise device. Most potentiometers used in paddle controls are not quite linear. If you rotate a paddle control at a constant speed, you'll notice that the cursor speeds up slightly at the beginning and end of the paddle rotation.

The Super Joystick has a pure resistive circuit which is absolutely linear within one tenth of one percent. In other words, it would give you precise control over an image of 1000 by 1000 pixels, were such resolution available. Thus it is suitable for high precision professional applications as well as educational and hobbyist ones.

Matched to your application

The Super Joystick also has two external trim adjustments, one for each direction. This allows you to perfectly match the unit to your application and computer. Say you want to work in a square area instead of the rectangular screen. Just reduce the horizontal size with the trim control.

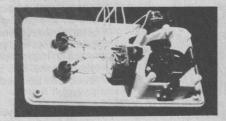
How many times have you played Space Invasion and had your thumb ache for hours from the repeated button pressing? This won't happen with the Super Joystick. Its two pushbuttons are big. Moreover, they use massive contact surfaces with a life of well over 1,000,000 contacts. A few games of Super Invasion using these big buttons will justify the purchase of the Super Joystick

The Super Joystick is self-centering in both directions. That means when you take your hand off it, the control will return to the center. However, if you want it to stay where you leave it, self-centering may be easily disabled by removing two springs.

The Super Joystick plugs right into the paddle control socket and doesn't require an I/O slot.

The sturdy case of the Super Joystick matches that of the Apple computer. Every component used is the very highest quality available. The Super Joystick even uses a full 16-conductor ribbon cable and you can add a second joystick (using our Select-A-Port extension unit for example) if you wish. The first Super Joystick replaces Paddles 0 and 1. You may not realize it, but the Apple has the capacity to support four paddle controls. A second Super Joystick would replace Paddles 2 and 3.

We invite your comparison of the Super Joystick with any other unit available. Order it and use it for 30 days. If you're not completely satisfied, return it for a prompt and courteous refund plus your return postage. You can't lose.



By removing two springs, self-centering can be defeated.

The Super Joystick consists of a self-centering linear joystick, two trim controls, and two pushbuttons mounted in an attractive case. It comes complete with schematics and a 90-day limited warranty. Cost is \$59.95.

Order Today

To order send payment indicated plus \$3.00 postage and handling. Orders may also be charged to your Visa, MasterCard or American Express account by mail, or if you prefer, use our toll-free number. Complete ordering information is provided on the convenient order forms on pages 35, 37 and 39.

Experience the joys of using the world's finest joystick. Order your Super Joystick at no obligation today.

Peripherals Plus

Peripherals Plus Extension Units Improve Your Apple II

EZ Port

E Z Port extends the game I/O port to the outside of your Apple II so that you don't have to open the computer when switching from paddles to joystick, VersaWriter, etc.

E Z Port goes beyond just extending the I/O. We utilize ZIP (Zero Insertion Pressure) sockets. With ZIP sockets, you plug in a 16 pin DIP plug and throw a small switch which engages the connections within the socket. No stress is exerted on the 16 pin connector until the switch is thrown.

Ordinary DIP sockets are not designed to be used over and over—eventually they won't make contact. Also repeatedly stressing a 16 pin connector will cause pins to snap off. So, E Z Port will not only *outlast* other I/O extenders, your paddles, VersaWriter and joysticks will last longer too!

Installation is easy: Plug E Z Port's cable into the game I/O, run the 24" cable to the outside of the computer, then peel the protective paper from the special adhesive strip and attach E Z Port to the side of your Apple II. Now making I/O changes will be quick, easy and safe!

At only \$24.95, E Z Port is one of the most cost effective improvements you can make to your Apple II.

Select A Port

Like the EZ Port, the Select A Port extends the game I/O port to the outside of your Apple II. However, the Select A Port also allows you to permanently plug in up to four peripherals simultaneously. It consists of five switchable I/O ports. The first socket directly parallels the game socket in the Apple. It can be utilized for sensitive devices for which diode isolation would interfere. (There is a switch provided for future expansion and this socket will override the other four). It is mounted in a 6" x 2 3/4" x 1/2" sturdy high impact plastic case. You simply switch on the peripheral to be used (joysticks, paddles, VersaWriter, etc.) and you are ready-no plugging or unplugging of delicate 16 pin connectors. You save wear and tear on your peripherals, your Apple II, and your nerves.

Dual Joysticks

With the Select A Port you can also use two joysticks simultaneously. The Apple II has the capability to read more than just two game controllers (paddles). The second I/O port on the Select A Port is cross wired so that it can be reversed and will read Paddles 2 and 3. Just plug another joystick into any of the remaining three ports and enjoy dual joystick operation.

Dual joysticks and no more hassles with connectors. At \$59.95 Select A Ports are going fast. Order yours today. EZ Port and Select A Port orders—add \$2.00 postage and handling. Ordering information provided on order forms.

Super Paddle

Are the paddle controllers on your Apple wearing out? Or did you get a new Apple without paddles?

We've got good news for you! Super Paddles. Each paddle control consists of a high-precision linear potentiometer and a big (1/2" D) industrial-quality pushbutton mounted in a sturdy high-impact molded plastic case which matches the Apple. Each of the two paddles is connected with a long 5 foot cable to the Apple paddle socket.

Every component in a set of Super Paddles is the very finest quality available. The set is backed by a 90-day limited warranty from the manufacturer as well as Peripherals Plus' moneyback guarantee of satisfaction.

To order, send \$39.95 plus \$2.00 postage and handling. Orders may also be charged to your Visa, MasterCard or American Express account by mail, or if you prefer, use our toll-free number. Complete ordering information is provided on the convenient order forms on pages 35, 37 and 39.

Peripherals Plus

Blank Cassettes

The quality of cassette tape used to save and load programs is an important factor in getting the programs to run. Tape quality for computers is measured differently from quality for audio tape. The tape must be capable of sending to the computer the electronic signals of the program without transmitting extraneous noises that could interfere with the ability of the computer to load the tape.

Our blank cassettes are tested and recommended for computer use. C-10 cassette, 5 min. per side, blank label on each side in a Norelco hard plastic box. [0010] \$1.25 each.

Head Cleaner

After hours of use, the read/write head in a cassette recorder will pick up minute particles of tape oxide. This dirt will hardly be noticable in dictation or music. But it is very noticable in computer use. One dropped bit in 16,000, and the program won't load.

Help keep your recorder in top shape with our non-abrasive head cleaner. It consists of 18 inches of stiff cleansing fabric in a standard cassette sheii. One 10-second pass every 40 hours of use will keep your heads as good as new. [0011] \$2.00. Send payment plus \$1.00 Shipping per order to:

Peripherals Plus

To order use convenient order forms on pages 35, 37 and 39.

Dithertizer!

You and your Apple can have a new view of the world.



Lynn Busby, president of the Computer Station, as seen by the Dithertizer II.

Dithering. Developed at Bell Labs and MIT, dithering was originally an approach to picture transmission. Compared to the other methods, dithering is fast and accurate.

The Dithertizer II was designed for the Apple computer by David K. Hudson, a researcher at MIT. Design goals were high accuracy, fast scanning, maximum reliability and an economical price.

High Quality Images

The resolution of the Dithertizer is the maximum the Apple can handle in the high-resolution mode, i.e. 280 x 192 (53,760) pixels.

To produce an image, a video camera is focused on the subject. Peripherals Plus furnishes a Sanyo VC161OX camera, a laboratory/industrial unit with an f 1.6 lens. This camera has a focus range of 18" (for extreme close ups) to infinity (for distant subjects). The image created is high in contrast and quality.

Using Dithered Images

What can one do with a dithered image? Upon completion it can be stored automatically in either page 1 or 2 of the high-resolution graphics area of the Apple. Hence, it can be printed out on practically any printer. To print it on an Apple Silentype printer or equivalent requires no additional software.

To take advantage of the automatic print routines in the Dithertizer itself does require additional software tailored to a specific printer. Software packages are available at \$44.95 each for the following printers: IDS 440, 445, 460, and 560; IP225; Anadex DP9500 and DP9501; Spinwriter 5510 and 5520.

With the proper software, the Dithertizer can be used to perform image enhancement, to indentify features, detect motion, track a moving target or create a detailed picture for display. The possibilities are limited only by your imagination.

Quality Construction

The dithertizer is manufactured to exacting specifications by Computer Station. It consists of the Dithertizer II board which plugs into Slot 7 in the Apple II, a cable which connects between the Dithertizer and motherboard and a 10 foot cable to the camera. The system requires a 48K Apple disk system.

The software package consists of three routines on disk: "Dither" to build a gray scale picture, "Contour" to produce an edge scan using image subtraction, and "Dscan" to store a binary image in either page 1 or 2 of the high-resolution graphics area.

The components of the package—hardware, software, and camera—are warranted by the manufacturers against defects in material and workmanship for 90 days. In addition, Peripherals Plus guarantees that if you are not completely satisfied you may return the system within 30 days for a prompt and courteous refund.

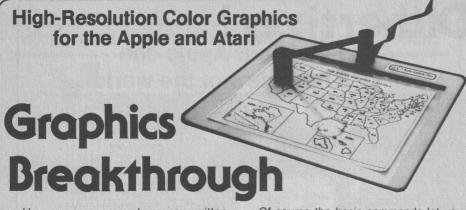
Order Today

The entire Dithertizer system consisting of the Dithertizer board, Sanyo camera, cables and software costs only \$650 plus \$6 shipping and handling in the continental United States. Customers in other locations should write for shipping rates. Price for the board and the software alone is \$300 while the camera alone is \$410.

To order send payment indicated plus \$3.00 postage and handling. Orders may also be charged to your Visa, MasterCard or American Express account by mail, or if you prefer, use our toll-free number. Complete ordering information, is provided on the convenient order forms on pages 35, 37 and 39.

Give your Apple a new view of the world with a Dithertizer. Order today. Write for more information.

Peripherals Plus



How many programs have you written that would benefit from animated high-resolution graphics? Probably several. It is this kind of dramatic graphics that distinguish outstanding programs from ordinary ones. But if you've ever agonized for hours or days just to get one image perfected, you're probably not anxious to do it again. Now there's a better way.

New Graphics Entry System

Today there is a new graphics system available that is not only amazingly useroriented but surprisingly economical. Called VersaWriter, it starts with an ingeniously simple entry board consisting of a 14" x 12" high impact plastic bed with a tough clear plastic overlay sheet. The original drawing or diagram is fastened with masking tape to the plastic bed and then covered with the clear sheet. Instead of using a light pen or complicated electronic X-Y head, the Versa-Writer uses a double jointed arm attached to the top of the entry board at one end and a dotted magnifying lens at the other end. The VersaWriter resembles a draftsman's pantograph on a smaller scale.

At each joint in the arm of the VersaWriter is a potentiometer. A cable from these potentiometers connects to the paddle input of the computer. No special interface electronics or board is needed. Since the arm of the VersaWriter bends only in one direction, each point on the plotting head corresponds to a unique set of resistances on the potentiometers. All that's needed now is software to translate these resistances into usable screen coordinates.

Exceptionally powerful software

It is in the software where VersaWriter really stands out. The Apple VersaWriter comes with two full disks of user-oriented software. (The Atari comes with one disk.) First it has sets of "low level" commands for entering, creating and copying drawings and diagrams. Secondly, it has extensive sets of application routines for moving, enlarging, rotating or coloring drawings that the user has created.

Graphics Systems Price Comparisons

i iide demparidend	
Versa Writer	\$299.00
Kurta Graphics Tablet	695.00
Summagraphics Digitizer	745.00
Houston Instruments Hi Pad	795.00
Annie Granbice Tablet	795 00

Of course the basic commands let you enter a drawing freehand or by tracing it. Wanting a wider "brush stroke"? Six widths are available. Drawings can be independently scaled in both the vertical and horizontal directions. An enclosed shape may be filled in with any of 212 colors. (Apple only). No, that is not a misprint- by the same technique that a printing press can create hundreds of colors from three primary ones, so can Versa-Writer.



From the shape table, a shape (the letter A) may be enlarged, rotated, colored or moved about the screen.

Create Animation for Other Programs

The shapes you create with VersaWriter can be used and manipulated with ease in other programs. Up to 255 shapes can be entered into a shape table. (Apple only) Theses shapes may then be placed on the screen in any position or may be overlaid on a full or partial screen image. Animation is produced easily by moving about a portion of the image created by VersaWriter. For example, by alternating between two images of an airplane propeller it will appear to be spinning.

Other VersaWriter software includes textwriter with which text can be added to graphics. (Both Apple and Atari) Upper and lower case, choice of color, text size, direction and starting point all may be specified.

The Area/Distance program (Apple) lets you calculate distances (or perimeters) by entering a scale and tracing a shape or map route with the drawing arm. Areas of figures, open and irregular, can be similiarly calculated.

The Apple software also includes sets of electronic and computer logic shapes. In addition, an entire disk of dramatic demonstration graphics is included. These twelve full-screen graphics run the gamut from a fully labeled cross section of a human skull to colored maps to animated cartoons to an electronics schematic.

Expansion Pac-1

The software for Versawriter is continually being revised and improved. The expansion pac-1 is a supplemental software package designed for use with the Apple VersaWriter. The package consists of three high resolution color programs:

- 1. Microscope Graphics Editor: Allows true hi-res blowup of picture (four power magnification) and is excellent for editing. The enlarged portion and/or the original can be saved.
- 2. Drawing Templates: Has eleven predefined shape tables including: architecture, chemistry, game shapes, plumbing, landscaping, electronics, space to create your own table, etc. —over 350 predefined shapes in all.
- 3. Color Shape Table Program: Create shape tables with true hi-res *color* shapes and define the shapes as you draw them. This makes more efficient use of memory space.

The expansion pac-1 requires a complete Apple VersaWriter system and is currently available for \$39.95 plus shipping and handling.

Best Performance and Price

At Peripherals Plus, we evaluated every graphic entry device. We wanted to handle the best one regardless of price. VersaWriter has the best performance bar none. Surprisingly it also has the lowest price, just \$299.00. The Apple VersaWriter requires an Apple II with Applesoft in ROM (or an Apple II Plus), disk, and 48K of memory. The Atari version requires an Atari 800, disk, and at least 32K of memory.

There are some differences in the Apple and Atari software—many of the features available for the Apple will soon be available for the Atari. But even the current capabilities of the Atari VersaWriter greatly surpass any other graphics package now available for the Atari computer.

Try VersaWriter for 30 days. If you are not completely satisfied we'll give you a prompt and courteous refund of the full price plus shipping both ways. VersaWriter comes complete with software, a comprehensive instruction manual, and a 90-day limited warranty from the manufacturer.

To order, specify Apple or Atari version, send payment indicated plus \$3.00 postage and handling. Orders may also be charged to your Visa, MasterCard or American Express account by mail, or if you prefer, use our toll-free number. Complete ordering information is provided on the convenient order forms on pages 35, 37 and 39.

For spectacular graphics on your computer order VersaWriter today.

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Creative Computing-- Albert Einstein in black on a red denim-look shirt with red neckband and cuffs.



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Plotter display of Pi to 625 Places in dark brown on a tan shirt.



I'd rather be playing spacewar-- black with white spaceships and lettering.

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All T-shirts are available in adult sizes S,M,L,XL. Bionic Toad, Program Bug and Spacewar also available in children's sizes S(6-8), M(10-12) and L(14-16). Made in USA. \$6.00 each plus 75 ¢ shipping.

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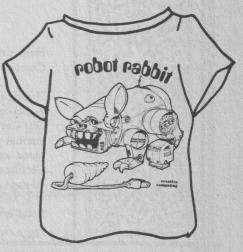
Crash Cursor and Sync from the comic strip in SYNC magazine emblazoned in white on this black shirt.



Computer Bum-- black design by cartoonist Monte Wolverton on gray denim-look shirt with black neckband and cuffs.



The **Program Bug** that terrorized Cybernia in Katie and the Computer is back on this beige t-shirt with purple design. You can share the little monster with your favorite kid.



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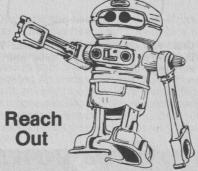
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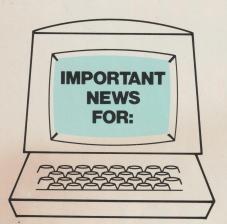
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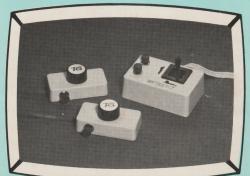
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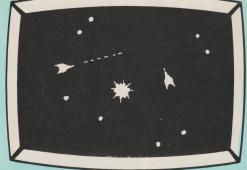






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